DOCUMENT RESUME

ED 112 156 CE 004 960

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|---|---|
| AUTHOR | Long, Thomas E.; And Others |
| TITLE | Determination of the Basic Mathematics Skill Needs and the Need for Mathematics Remediation for Secondary Vocational Education Students. |
| INSTITUTION | Pennsylvania State Univ., University Park. Dept. of Vocational Education. |
| SPONS AGENCY | Pennsylvania State Dept. of Education, Harrisburg. Bureau of Vocational, Technical, and Continuing Education. |
| PUB DATE | Apr 73 |
| NOTE | 150p. |
| EDRS PRICE | MF-$0.76 HC-$6.97 Plus Postage |
| DESCRIPTORS | Basic Skills; Educational Assessment; Educational Needs; Relevance (Education); *Remedial Mathematics; Secondary Education; *Secondary School Mathematics; *State Surveys; *Student Needs; Tables (Data); Teacher Response; *Vocational Education |
| IDENTIFIERS | Pennsylvania |

ABSTRACT

On an optical scanning survey form listing 66 basic mathematics skills, all secondary vocational teachers in Pennsylvania were asked to identify mathematical skills essential to success and skills in need of remediation for their specialties. Of 4,839 forms sent out, data from 3,404 yielded the 122 tables (121 pages) of findings arranged according to 61 specialties in the general areas of trade and industrial, technical, agricultural, home economics, business, and distributive education occupations. Two tables for each specialty are presented, ranking the skills according to essentiality for success and according to teacher perceived need for remediation. For each skill, the rank earned, the number of teachers responding to the item, and the percentage of the group establishing the rank are reported. Pooled rankings of essential and remedial skills are also shown for each vocational area. Every skill is found high in either or both the essentiality or need for remediation rankings. These findings indicate much variation and suggest the need for remediation in all basic mathematics skills. Several implications for using the data to personalize mathematics skill development are stated. A 12-item reference list, sample inventory form, and a vocational specialties list conclude the report. (MS)

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# DETERMINATION OF THE BASIC MATHEMATICS SKILL NEEDS AND THE NEED FOR MATHEMATICS REMEDIATION FOR SECONDARY VOCATIONAL EDUCATION STUDENTS

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VOCATIONAL — TECHNICAL EDUCATION **Research Report**

CE004960

APRIL, 1973

2/3

## ABSTRACT

This study determined which basic mathematics skills are necessary for success in various secondary vocational programs. It also determined which basic mathematics skills need most remedial attention in students entering secondary vocational programs.

Project data provide valuable information to vocational teachers and administrators, counselors, mathematics department chairmen and teachers, and curriculum specialists. Data will be useful in counseling pre-vocational students. They will be helpful in identifying the need for and in planning remedial programs for present and future vocational students. They might also promote the development of mathematics curricula which will better serve vocationally oriented students.

## PREFACE

This project came about primarily from the principal investigator's more than ten years experience in the public schools of Pennsylvania. During these years teacher lamentations were heard citing the basic skill deficiencies of many students enrolled in the secondary schools. Particular citations were noted from vocational educators. Personal pilot study results seemed to corroborate teachers' complaints, thus paving the way for this much larger project.

Many persons assisted in this effort. First, I wish to thank the research assistants, Thomas E. Enderlein, Joseph A. Ford, and Elizabeth C. King, who so ably handled their many diverse tasks. I also acknowledge the consultation of Dr. Edwin L. Herr, with whom the pilot study was reported, and Drs. Angelo C. Gillie and Jerome T. Kapes for their assistance during collection and analysis of the data.

I particularly thank the teachers of this state who provided the data for this study.

Lastly, I thank Dr. Ferman Moody and Dr. Clarence Dittenhafer of the Pennsylvania Research Coordinating Unit for their assistance and support during trying times.

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## LIST OF TABLES

Because of the large number of tables resulting from this study, the tables are categorized by vocational division, with specialties within each division being listed in alphabetical order.

For ease of reference in this listing, table titles are shortened and they are numbered in arabic notation. The order of table presentation was established by the pattern used for the U.S.O.E. - Pennsylvania Course Code Equivalence Table found in the Pennsylvania Vocational Education Directory - 1971.

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## INTRODUCTION

Much is written and even more has been spoken about the relationships between "vocational" and "academic" skill acquisition at the secondary school level. Vocational teachers along with other teaching specialists are confronted with the need to help students understand the importance of their subjects in different areas of application.

Administrators, curriculum builders, counselors, and other local educators should see to it that the inter-relationships between subjects and areas of study are investigated and evaluated. Continuing evaluation would promote curricular health, and insightful changes could be made which would bring vocational relevance and balance to all aspects of the curriculum.

For maximum curricular vigor it would be necessary to involve each teacher in the evaluative process. It would also be necessary that each teacher be encouraged to articulate his teaching with other courses, educational experiences, and vocations for which the learning is requisite.

## THE PROBLEM

Vocational teachers live daily with the problem of dovetailing related studies with the specialty training they offer. One of the critical relationships for these teachers is found in the interface between mathematics training and the vocational specialty training. The problem is further complicated by the observation that each vocational specialty seems to require its own set of associated mathematics competencies. Here is a classic example of the need for inter-disciplinary communication. Even if good communication between mathematics and vocational teachers

existed, which is apparently not the case, problems remain. Long and Herr (1973) found that while most mathematics teachers can speak with confidence of the different levels of math competence as they are reflected in the work of mathematically oriented professionals, e.g., engineers, physicists, actuaries, it is less probable that teachers of mathematics can speak with equal confidence of the mathematics functions important to skilled and craft occupations or the vocational training which is preparatory for such occupations. If mathematics teachers cannot speak with this confidence, who can? Counselors might be expected to, but they, as a group, probably display less job-related mathematics insight than mathematics teachers.

In their study of 260 vocational teachers, Long and Herr found that vocational teachers know which mathematics skills are necessary for success in their specialties and are also able to pinpoint distinct math skill deficiencies in students entering the vocational program. These teachers, however, are generally not available to students when they are considering secondary vocational programs because they are housed in high schools or in Area Vocational Schools (AVTS).

Students who choose to enter vocational preparatory programs then may be informationally disadvantaged. That is, they probably do not know which mathematics (and other) skills have relevance to their vocational goals. It seems then, that the chasm between related studies in mathematics and vocational specialty training is not effectively being bridged.

In summary, mathematics teachers and counselors probably cannot readily identify the mathematics functions required in each vocational specialty. Basic mathematics training is generally not offered in the Area Vocational Technical School. Inter-specialty communication between mathematics and vocational teachers is stilted at best. Vocational teachers are generally not available for discussion with students when they are choosing vocational training specialties.

Given these situations, the need still exists for mathematics competence in vocational specialty training.

## OBJECTIVES

Considering the need for appropriate guidance and curricular relevance in vocational education, this study was designed to provide information which would promote satisfaction of some of the unmet demands regarding mathematics competency needs in vocational specialty training at the secondary school level.

The specific objectives were:

1. To determine from a large sample of vocational teachers which basic mathematics skills are necessary for success in various secondary vocational programs.
2. To determine which basic mathematics skills need most remedial attention for students entering secondary vocational programs.

## REVIEW OF RELATED LITERATURE

The materials referenced here are not an encyclopedic review of all written or spoken on the matter. The review is merely an extraction and synthesization of the most recent research and rhetoric related to basic skill training in vocational educational endeavors. Not one piece of literature can be cited which denied the critical relationship between basic general education and vocational specialty training. Conversely, the need for and use of information of the kind collected in this study was amply supported.

In discussing curricular concepts in specialty training activities Kemp (1966) emphasized that basic skill education should be closely tied with vocational offerings to make both more meaningful to the student. She clearly documented the utility of

such endeavors in programs designed for children plagued with various kinds and degrees of disadvantageness.

Osipow (1969) felt that efforts must be made to show how skills acquired in school have utility in the world of work.

In stressing the need for the educational system to assume responsibility for preparing every student to move on to his next educational or occupational step, Venn (1964) stated that no person can be successful in occupational education unless he has the basic tool skills of reading, writing, listening, and computing. He further stated that "the separation of occupational education from general education at any level increases the possibility of limiting the individual's future development because of lack of related knowledge and general education (p. 169)."

Marland (1971) in supporting career education for elementary and secondary students cited a need for the structuring of basic subjects, grades one through twelve, around the theme of career development and the requirements of the world of work.

Rhodes (1969), the former governor of Ohio, spoke directly to the mathematics issue.

> Ask any carpenter to quote for you the Pythagorean theorem. He will probably assume that you have lost your marbles, and he may disclaim any understanding of such an animal. This disclaimer will make the math teacher feel a bit superior and provide him with the opportunity to display his knowledge. If, however, you should ask that same carpenter if he could lay out a right angle with the batter boards for the contractor to start construction of a building, he would immediately say, "Yes, I can do that" - without understanding that he was using the Pythagorean theorem. He probably cannot quote the theorem; and he probably cannot prove the theorem; however, he can use the theorem for a useful purpose in relationship to his work. Even an average young person can be taught the functions of mathematics and the principles of science that he will need in his occupation, if these are taught in relation to that occupation and in relation to the real problems and activities in which he has an opportunity to put the theory to work (p. 25).

Testimony to the importance of mathematics skills in vocational education is found in the literature as evidenced in the work of Schill and Arnold (1965) on curriculum content in six technologies and in the work of Schill and Barlow (1962) concerning the role of mathematics in electrical and electronics technology. In a study of technicians Laws (1967) found that the mathematical ability of the individual often determines his pay-roll job assignment, that all technicians need a common core of basic skills in mathematics, and that the math needs of tomorrow's worker may be different from those of today. Kapes (1971) found all GATB scores to be positively related to vocational students' grade point average in school work. The aptitudes showing the highest relationships were found to be numerical and verbal. Of these the numerical aptitude was highest in importance. In a pilot study prior to the one reported here Long and Herr (1973) found that there is a mathematics base which underlies all vocational training and that the required mathematics functions differ across vocational education specialties.

The review of the literature lends emphasis and support to the concepts that the definition of and training in basic skills are very important to successful vocational education and occupational competency.

## PROCEDURES

In this study an optical scanning survey form listing 66 basic mathematics skills was distributed to all secondary vocational teachers in Pennsylvania.

The 66 skills used were obtained from standard mathematics or remedial texts and were reviewed for appropriateness by selected teacher educators. The forms were not sent to the teacher directly. They were sent to Directors of Area Vocational Technical Schools or to the principals of schools housing vocational programs. These individuals were asked to distribute and collect the forms and then return

them to the investigators in pre-paid mailers. The vocational programs were identified from the Pennsylvania Vocational Education Directory, Secondary, Part I, Programs/Enrollments, Bureau of Vocational Technical and Continuing Education, Department of Education, Harrisburg, Pennsylvania, 1971.

The teacher respondents were asked to identify the skills that were essential for success in their vocational specialty and then to identify those skills lacked by the typical or average student enrolling in their specialty.

A total of 4,839 forms were sent out. Of these, 3,467 or 71.6 percent were returned. Of those returned, the data from 3,404 or 70% of the total mailed were included in the study. Sixty three (63) forms were not included in the analysis for various reasons, e.g., mutilation, improper marking or non-completion of the form.

Following collection of the instruments, they were coded, processed and tabulated. Processing included optical scanning to punched cards to computer analysis and print out. Computer analysis was done using a Frequency Analysis of Multiple Choices Program (FRANM) available from the Computation Center of the Pennsylvania State University. Processing yielded the data as reported in TABLES 1 to 122. In collecting the data, teachers were additionally asked to identify their major teaching specialty and to mark a scale indicating the number of credits they themselves had earned beyond high school. No other information was collected. All respondents remained completely anonymous.

## FINDINGS

The findings are reported in TABLES 1 through 122. For each vocational specialty one finds two tables - one ranks the basic mathematics skills according to essentiality for success in the specialty; the second ranks the skills on teacher

perceived need for remediation of the skills as determined from the number of teachers who felt that the skill was lacking in the typical student entering the specialty. Tables yield, for each skill, the rank earned, the number of teachers responding to the item, and the percentage of the group who established the rank reported.

The skills in each table are ranked according to the percent of the teachers who responded to each individual math skill item. The percentage is not based on the total number of teachers in the specialty who completed the survey form.

For example, 20 teachers representing one vocational specialty may have completed the survey form. Only 19 teachers may have responded to a particular item, and of those 19, only 18 may have indicated that the skill was essential (or lacking). The percentage and ranking for the skill as treated in the FRANM Program was computed using the ratio $\frac{18}{19}$ rather than $\frac{18}{20}$.

One must continually keep in mind that all teachers did not respond to each item. Therefore, the percentage and ranking reported for each skill reflects only the number of teachers who chose to respond to the item, not to the number of teachers who completed the survey form.

There is not perfect correspondence between the tables. On the first table for each specialty, the skills are ranked on the basis of need in the program. The second table ranks the skills on the degree to which teachers felt them to be missing in newly enrolling students. One must still compare the two tables to determine if a skill inneed of remediation is in fact a skill highly essential for success in the specialty.

Following the two tables for each individual specialty in each division, i.e., Health Occupations, Business Occupations, etc., two additional tables are

provided. One reports the mathematics skill pooled ranking based on need as perceived by teachers of all specialties within the division. The second table shows the pooled ranking of the skills based on the teacher perceived need for remediation in newly enrolling students.

The hierarchy of skills ranked as essential or lacking shows much variation between specialties. Cumulative evidence, however, suggests a need for remediation in all basic mathematics skills, that is, each skill is somewhere found high in either or both the essentiality or need for remediation rankings. Curricular implications are clear.

TABLE 1

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF AIR CONDITIONING AND HEATING TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 2 | 94.7 | 18 | Multiplication, whole numbers |
| 2 | 94.7 | 18 | Subtraction, whole numbers |
| 2 | 94.7 | 18 | Addition, whole numbers |
| 4 | 94.4 | 17 | Division, whole numbers |
| 5 | 84.2 | 16 | Reading a rule |
| 6 | 83.3 | 15 | Averages |
| 7.5 | 78.9 | 15 | Liquid measure |
| 7.5 | 78.9 | 15 | Meaning of percentage |
| 9 | 76.5 | 13 | Reading large numbers |
| 10.5 | 73.7 | 14 | Temperature conversion |
| 10.5 | 73.7 | 14 | Reading, writing decimals |
| 13 | 72.2 | 13 | Volume of cylinder |
| 13 | 72.2 | 13 | Finding percent of a number |
| 13 | 72.2 | 13 | Rounding off decimals |
| 16.5 | 68.4 | 13 | Reducing fractions to lowest terms |
| 16.5 | 68.4 | 13 | Subtraction, fractions |
| 16.5 | 68.4 | 13 | Addition, fractions |
| 16.5 | 68.4 | 13 | Area of square |
| 20 | 66.7 | 12 | Addition, mixed numbers |
| 20 | 66.7 | 12 | Changing decimals to percents |
| 20 | 66.7 | 12 | Rounding numbers |
| 22 | 63.2 | 12 | Area of circle |
| 25 | 61.1 | 11 | Changing decimals to common fractions |
| 25 | 61.1 | 11 | Changing percent to decimals |
| 25 | 61.1 | 11 | Subtraction of decimals |
| 25 | 61.1 | 11 | Addition of decimals |
| 25 | 61.1 | 11 | Subtraction, mixed numbers |
| 29.5 | 57.9 | 11 | Multiplication, mixed numbers |
| 29.5 | 57.9 | 11 | Area of rectangle |
| 29.5 | 57.9 | 11 | Micrometer reading |
| 29.5 | 57.9 | 11 | Division, mixed numbers |
| 32 | 55.6 | 10 | Multiplication of decimals |
| 33 | 52.9 | 9 | Changing common fractions to decimals |
| 34.5 | 52.6 | 10 | Multiplication, fractions |
| 34.5 | 52.6 | 10 | Division, fractions |
| 37.5 | 50 | 9 | Division of decimals |
| 37.5 | 50 | 9 | Decimal equivalents |
| 37.5 | 50 | 9 | Reducing mixed numbers to simplest form |
| 37.5 | 50 | 9 | Multiplying whole numbers and decimals by 10,100,etc. |
| 40.5 | 47.4 | 9 | Measuring angles |
| 40.5 | 47.4 | 9 | Area of circle using $A=\pi r2$ |
| 43.5 | 44.4 | 8 | Ratio and proportion |
| 43.5 | 44.4 | 8 | Dividing whole numbers and decimals by 10,100,etc. |
| 43.5 | 44.4 | 8 | Changing common fractions to percents |
| 43.5 | 44.4 | 8 | Changing percents to common fractions |
| 46 | 42.1 | 8 | Circumference using $C=\pi d=2\pi r$ |
| 47.5 | 42.1 | 8 | Squaring a number |
| 47.5 | 42.1 | 8 | Comparing fractions |
| 49 | 41.2 | 7 | Volume of rectangular solid |
| 51.5 | 38.9 | 7 | Area of triangle |
| 51.5 | 38.9 | 7 | Finding a number when a percent of it is known |
| 51.5 | 38.9 | 7 | Finding what percent one number is of another |
| 51.5 | 38.9 | 7 | Finding what part one number is of another |
| 55 | 36.8 | 7 | Square root |
| 55 | 36.8 | 7 | Simple algebraic equation with one unknown |
| 55 | 36.8 | 7 | Using pi $\pi$ |
| 57 | 35.3 | 6 | Volume of cube |
| 58.5 | 33.3 | 6 | Area of parallelogram |
| 58.5 | 33.3 | 6 | Improper fractions, mixed numbers |
| 60 | 31.6 | 6 | Finding length of unknown side of right triangle |
| 61.5 | 27.8 | 5 | Finding a number when a fractional part of it is known |
| 61.5 | 27.8 | 5 | Acute and obtuse angles |
| 63.5 | 22.2 | 14 | Area of trapezoid |
| 63.5 | 22.2 | 4 | Volume of cone |
| 65.5 | 16.7 | 3 | Volume of sphere |
| 65.5 | 16.7 | 3 | Volume of pyramid |

TABLE 2

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING AIR CONDITIONING AND HEATING STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 89.5 | 17 | Micrometer reading |
| 2.5 | 82.4 | 14 | Finding length of unknown side of right triangle |
| 2.5 | 82.4 | 14 | Volume of cylinder |
| 4.4 | 81.3 | 13 | Volume of rectangular solid |
| 4.4 | 81.3 | 13 | Finding what percent one number is of another |
| 7.5 | 77.8 | 14 | Simple algebraic equation with one unknown |
| 7.5 | 77.8 | 14 | Using pi $\pi$ |
| 7.5 | 77.8 | 14 | Circumference using $C = \pi d = 2\pi r$ |
| 7.5 | 77.8 | 14 | Area of circle using $A = \pi r2$ |
| 10.5 | 76.5 | 13 | Ratio and proportion |
| 10.5 | 76.5 | 13 | Division, mixed numbers |
| 13 | 75 | 12 | Acute and obtuse angles |
| 13 | 75 | 12 | Finding a number when a percent of it is known |
| 13 | 75 | 12 | Volume of cube |
| 16 | 73.3 | 11 | Volume of sphere |
| 16 | 73.3 | 11 | Volume of cone |
| 16 | 73.3 | 11 | Volume of pyramid |
| 18.5 | 72.2 | 13 | Multiplication, fractions |
| 18.5 | 72.2 | 13 | Division, fractions |
| 20.5 | 70.6 | 12 | Square root |
| 20.5 | 70.6 | 12 | Changing decimals to common fractions |
| 23.5 | 68.8 | 11 | Finding a number when a fractional part of it is known |
| 23.5 | 68.8 | 11 | Comparing fractions |
| 23.5 | 68.8 | 11 | Changing common fractions to decimals |
| 23.5 | 68.8 | 11 | Reducing mixed numbers to simplest form |
| 26.5 | 68.4 | 13 | Temperature conversion |
| 26.5 | 68.4 | 13 | Reading, writing decimals |
| 28.5 | 66.7 | 12 | Addition, fractions |
| 28.5 | 66.7 | 12 | Subtraction, fractions |
| 33.5 | 64.7 | 11 | Squaring a number |
| 33.5 | 64.7 | 11 | Decimal equivalents |
| 33.5 | 64.7 | 11 | Measuring angles |
| 33.5 | 64.7 | 11 | Area of circle |
| 33.5 | 64.7 | 11 | Changing percent to decimals |
| 33.5 | 64.7 | 11 | Changing decimals to percents |
| 33.5 | 64.7 | 11 | Finding percent of a number |
| 33.5 | 64.7 | 11 | Multiplication, mixed numbers |
| 38.5 | 63.2 | 12 | Liquid measure |
| 38.5 | 63.2 | 12 | Reading a rule |
| 40 | 60 | 9 | Area of parallelogram |
| 42.5 | 62.5 | 10 | Subtraction, mixed numbers |
| 42.5 | 62.5 | 10 | Finding what part one number is of another |
| 42.5 | 62.5 | 10 | Changing percents to common fractions |
| 42.5 | 62.5 | 10 | Changing common fractions to percents |
| 45.5 | 61.1 | 11 | Reducing fractions to lowest terms |
| 45.5 | 61.1 | 11 | Meaning of percentage |
| 47 | 60 | 9 | Improper fractions, mixed numbers |
| 48 | 58.8 | 10 | Rounding off decimals |
| 49 | 56.3 | 9 | Addition, mixed numbers |
| 50.5 | 53.5 | 8 | Area of triangle |
| 50.5 | 53.3 | 8 | Area of trapezoid |
| 52 | 52.9 | 9 | Division of decimals |
| 53.5 | 52.6 | 10 | Area of rectangle |
| 53.5 | 52.6 | 10 | Area of square |
| 55.5 | 50 | 9 | Multiplication of decimals |
| 55.5 | 50 | 9 | Addition of decimals |
| 57.5 | 47.1 | 8 | Dividing whole numbers and decimals by 10,100,etc. |
| 57.5 | 47.1 | 8 | Subtraction of decimals |
| 59 | 44.4 | 8 | Multiplying whole numbers and decimals by 10,100,etc. |
| 60 | 42.1 | 8 | Division, whole numbers |
| 61 | 38.9 | 7 | Averages |
| 62 | 31.6 | 6 | Multiplication, whole numbers |
| 63 | 31.3 | 5 | Rounding numbers |
| 64 | 17.6 | 3 | Addition, whole numbers |
| 65 | 16.7 | 3 | Subtraction, whole numbers |
| 66 | 13.3 | 2 | Reading large numbers |

TABLE 3

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF APPLIANCE REPAIR TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1.8 | 100 | 29 | Subtraction, whole numbers |
| 1.5 | 100 | 29 | Addition, whole numbers |
| 4.5 | 96.6 | 28 | Multiplication, whole numbers |
| 4.5 | 96.6 | 28 | Addition of decimals |
| 4.5 | 96.6 | 28 | Division, whole numbers |
| 4.5 | 96.6 | 28 | Reading, writing decimals |
| 8.5 | 93.1 | 27 | Dividing whole numbers and decimals by 10, 100, etc. |
| 8.5 | 93.1 | 27 | Subtraction of decimals |
| 8.5 | 93.1 | 27 | Reading a rule |
| 8.5 | 93.1 | 27 | Multiplying whole numbers and decimals by 10, 100, etc. |
| 16 | 89.7 | 26 | Subtraction, mixed numbers |
| 16 | 89.7 | 26 | Multiplication, mixed numbers |
| 16 | 89.7 | 26 | Subtraction, fractions |
| 16 | 89.7 | 26 | Addition, mixed numbers |
| 16 | 89.7 | 26 | Addition, fractions |
| 16 | 89.7 | 26 | Meaning of percentage |
| 16 | 89.7 | 26 | Division of decimals |
| 16 | 89.7 | 26 | Division, fractions |
| 16 | 89.7 | 26 | Improper fractions, mixed numbers |
| 16 | 89.7 | 26 | Multiplication of decimals |
| 16 | 89.7 | 26 | Decimal equivalents |
| 25.5 | 86.2 | 25 | Changing decimals to per cents |
| 25.5 | 86.2 | 25 | Changing common fractions to decimals |
| 25.5 | 86.2 | 25 | Reducing mixed numbers to simplest form |
| 25.5 | 86.2 | 25 | Changing per cent to decimals |
| 25.5 | 86.2 | 25 | Reading large numbers |
| 25.5 | 86.2 | 25 | Division, mixed numbers |
| 25.5 | 86.2 | 25 | Rounding off decimals |
| 25.5 | 86.2 | 25 | Multiplication, fractions |
| 32 | 82.8 | 24 | Temperature conversion |
| 32 | 82.8 | 24 | Liquid measure |
| 32 | 82.8 | 24 | Rounding numbers |
| 32 | 82.8 | 24 | Reducing fractions to lowest terms |
| 32 | 82.8 | 24 | Finding per cent of a number |
| 35 | 82.1 | 23 | Averages |
| 36 | 79.3 | 23 | Changing decimals to common fractions |
| 37 | 75.9 | 22 | Squaring a number |
| 38.5 | 69 | 20 | Changing common fractions to per cents |
| 38.5 | 69 | 20 | Comparing fractions |
| 40 | 67.9 | 10 | Simple algebraic equation with one unknown |
| 41 | 66.7 | 18 | Finding a number when a fractional part of it is known |
| 43 | 65.5 | 19 | Changing per cents to common fractions |
| 43 | 65.5 | 19 | Square root |
| 43 | 65.5 | 19 | Micrometer reading |
| 45.5 | 62.1 | 18 | Finding what part one number is of another |
| 45.5 | 62.1 | 18 | Finding what per cent one number is of another |
| 47 | 58.6 | 17 | Finding a number when a per cent of it is known |
| 48 | 55.2 | 16 | Ratio and proportion |
| 49 | 51.7 | 15 | Area of square |
| 50.5 | 48.3 | 14 | Volume of cube |
| 50.5 | 48.3 | 14 | Area of rectangle |
| 52 | 44.8 | 13 | Using pi $\pi$ |
| 53.5 | 41.4 | 12 | Volume of cylinder |
| 53.5 | 41.4 | 12 | Volume of rectangular |
| 55 | 39.3 | 11 | Measuring angles |
| 56 | 37.9 | 11 | Circumference using $C = \pi D = 2\pi r$ |
| 57.5 | 35.7 | 10 | Area of circle |
| 57.5 | 35.7 | 10 | Area of parallelogram |
| 59 | 31 | 9 | Area of circle using $A = \pi r^2$ |
| 60 | 27.6 | 8 | Area of triangle |
| 61 | 25 | 7 | Volume of sphere |
| 62 | 18.5 | 5 | Finding length of unknown side of right triangle |
| 63 | 17.9 | 5 | Area of trapezoid |
| 65 | 14.3 | 4 | Acute and obtuse angles |
| 65 | 14.3 | 4 | Volume of cone |
| 65 | 14.3 | 4 | Volume of pyramid |

TABLE 4

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING APPLIANCE REPAIR STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1.5 | 85.7 | 24 | Decimal equivalents |
| 1.5 | 85.7 | 24 | Square root |
| 4 | 82.1 | 23 | Changing decimals to common fractions |
| 4 | 82.1 | 23 | Improper fractions, mixed numbers |
| 4 | 82.1 | 23 | Temperature conversion |
| 7 | 78.6 | 22 | Division, mixed numbers |
| 7 | 78.6 | 22 | Simple algebraic equation with one unknown |
| 7 | 78.6 | 22 | Changing decimals to per cents |
| 9.5 | 76.9 | 20 | Finding a number when a fractional part of it is known |
| 9.5 | 76.9 | 20 | Volume of sphere |
| 14 | 75 | 21 | Changing common fractions to per cents |
| 14 | 75 | 21 | Finding per cent of a number |
| 14 | 75 | 21 | Finding what per cent one number is of another |
| 14 | 75 | 21 | Finding a number when a per cent of it is known |
| 14 | 75 | 21 | Changing common fractions to decimals |
| 14 | 75 | 21 | Changing per cent to decimals |
| 14 | 74.1 | 20 | Volume of cylinder |
| 19.5 | 73.1 | 19 | Volume of cone |
| 19.5 | 73.1 | 19 | Volume of pyramid |
| 19.5 | 73.1 | 19 | Area of triangle |
| 19.5 | 73.1 | 19 | Squaring a number |
| 22 | 72.4 | 21 | Subtraction, fractions |
| 23 | 72 | 18 | Area of parallelogram |
| 26.5 | 71.4 | 20 | Finding what part one number is of another |
| 26.5 | 71.4 | 20 | Subtraction, mixed numbers |
| 26.5 | 71.4 | 20 | Multiplication, mixed numbers |
| 26.5 | 71.4 | 20 | Reducing mixed numbers to simplest form |
| 26.5 | 71.4 | 20 | Comparing fractions |
| 26.5 | 71.4 | 20 | Division of decimals |
| 30.5 | 70.4 | 19 | Reading $\pi$ rule |
| 30.5 | 70.4 | 19 | Micrometer reading |
| 32.5 | 69.2 | 13 | Measuring angles |
| 32.5 | 69.2 | 18 | Volume of rectangular solid |
| 34 | 69 | 20 | Division, fractions |
| 35.5 | 68 | 17 | Area of trapezoid |
| 35.5 | 68 | 17 | Area of circle |
| 39 | 67.9 | 19 | Meaning of percentage |
| 39 | 67.9 | 19 | Multiplication of decimals |
| 39 | 67.9 | 19 | Addition, mixed numbers |
| 39 | 67.9 | 19 | Changing per cents to common fractions |
| 39 | 67.9 | 19 | Liquid measure |
| 43 | 66.7 | 18 | Reducing fractions to lowest terms |
| 43 | 66.7 | 18 | Circumference using $C = \pi d = 2\pi r$ |
| 43 | 66.7 | 18 | Area of circle using $A = \pi r^2$ |
| 45.5 | 65.5 | 19 | Addition, fractions |
| 45.5 | 65.5 | 19 | Multiplication, fractions |
| 47 | 64.3 | 18 | Reading, writing decimals |
| 48 | 64 | 16 | Acute and obtuse angles |
| 50 | 63 | 17 | Area of rectangle |
| 50 | 63 | 17 | Using pi $\pi$ |
| 50 | 63 | 17 | Ratio and proportion |
| 52.5 | 61.5 | 16 | Volume of cube |
| 52.5 | 61.5 | 16 | Area of square |
| 54 | 60.9 | 14 | Finding length of unknown side of right triangle |
| 55 | 55.6 | 15 | Dividing whole numbers and decimals by 10, 100, etc. |
| 56.5 | 53.6 | 15 | Addition of decimals |
| 56.5 | 53.6 | 15 | Subtraction of decimals |
| 58 | 51.9 | 14 | Averages |
| 59 | 50 | 14 | Rounding off decimals |
| 60 | 48.1 | 13 | Multiplying whole numbers and decimals by 10,100,etc. |
| 61 | 46.4 | 13 | Rounding numbers |
| 62 | 44.4 | 12 | Division, whole numbers |
| 63 | 32.1 | 9 | Multiplication, whole numbers |
| 64 | 25 | 7 | Reading large numbers |
| 65.5 | 17.9 | 5 | Addition, whole numbers |
| 65.5 | 17.9 | 5 | Subtraction, whole numbers |

TABLE 5

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF AUTOMOTIVE BODY TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 93.9 | 62 | Addition, whole numbers |
| 2 | 92.4 | 61 | Subtraction, whole numbers |
| 3 | 90.9 | 60 | Multiplication, whole numbers |
| 4 | 89.1 | 57 | Reading a rule |
| 5 | 86.4 | 57 | Division, whole numbers |
| 6 | 78.1 | 50 | Meaning of percentage |
| 7 | 77.3 | 57 | Liquid measure |
| 8 | 75 | 48 | Averages |
| 10 | 73.8 | 48 | Addition, mixed numbers |
| 10 | 73.8 | 48 | Reading, writing decimals |
| 10 | 73.8 | 48 | Ratio and proportion |
| 12 | 70.8 | 46 | Addition, fractions |
| 13.5 | 69.2 | 45 | Subtraction, fractions |
| 13.5 | 69.2 | 45 | Subtraction, mixed numbers |
| 15 | 66.2 | 43 | Reducing fractions to lowest terms |
| 17 | 64.1 | 41 | Addition of decimals |
| 17 | 64.1 | 41 | Reading large numbers |
| 17 | 64.1 | 41 | Finding per cent of a number |
| 19 | 63.5 | 40 | Subtraction of decimals |
| 20.5 | 62.5 | 40 | Decimal equivalents |
| 20.5 | 62.5 | 40 | Comparing fractions |
| 22 | 61.5 | 40 | Rounding off decimals |
| 23.5 | 59.4 | 38 | Rounding numbers |
| 23.5 | 59.4 | 38 | Changing decimals to common fractions |
| 25 | 58.7 | 37 | Multiplication, mixed numbers |
| 26 | 56.3 | 36 | Changing common fractions to decimals |
| 27 | 55.6 | 35 | Changing per cent to decimals |
| 28 | 54.8 | 34 | Multiplication of decimals |
| 29 | 55.4 | 36 | Multiplication, fractions |
| 30.5 | 54.7 | 35 | Division, mixed numbers |
| 30.5 | 54.7 | 35 | Reducing mixed numbers to simplest form |
| 32 | 54 | 34 | Changing decimals to per cents |
| 33.5 | 53.8 | 35 | Division, fractions |
| 33.5 | 53.8 | 35 | Measuring angles |
| 35 | 52.5 | 32 | Changing common fractions to per cents |
| 36 | 51.6 | 32 | Division of decimals |
| 37 | 50.8 | 32 | Micrometer reading |
| 38 | 50 | 32 | Improper fractions, mixed numbers |
| 39 | 47.5 | 29 | Changing per cents to common fractions |
| 40 | 45.9 | 28 | Dividing whole numbers and decimals by 10, 100, etc. |
| 41 | 45.2 | 28 | Multiplying whole numbers and decimals by 10, 100, etc. |
| 42 | 42.9 | 27 | Volume of cylinder |
| 43 | 41.5 | 27 | Finding what per cent one number is of another |
| 44 | 40.3 | 25 | Finding what part one number is of another |
| 45 | 37.5 | 24 | Area of circle |
| 46 | 36.5 | 23 | Finding a number when a per cent of it is known |
| 47 | 35.9 | 23 | Temperature conversion |
| 48 | 35.4 | 23 | Area of square |
| 49 | 31.3 | 20 | Using pi $\pi$ |
| 50 | 30.8 | 20 | Area of rectangle |
| 51 | 28.6 | 18 | Circumference using $C = \pi d = 2\pi r$ |
| 52 | 27.4 | 17 | Finding a number when a fractional part of it is known |
| 53 | 26.6 | 17 | Area of circle using $A = \pi r^2$ |
| 54 | 21 | 13 | Squaring a number |
| 55 | 12.9 | 18 | Square root |
| 56 | 18.8 | 12 | Acute and obtuse angles |
| 57 | 18.5 | 12 | Area of triangle |
| 58.5 | 17.5 | 11 | Simple algebraic equation with one unknown |
| 58.5 | 17.5 | 11 | Volume of rectangular solid |
| 60 | 15.9 | 10 | Volume of cube |
| 61 | 14.5 | 9 | Finding length of unknown side of right triangle |
| 62 | 12.5 | 8 | Area of parallelogram |
| 63 | 11.1 | 7 | Area of trapezoid |
| 64.5 | 7.9 | 5 | Volume of sphere |
| 64.5 | 7.9 | 5 | Volume of cone |
| 66 | 6.3 | 4 | Volume of pyramid |

TABLE 6
RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING AUTOMOTIVE BODY STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 87.7 | 50 | Ratio and proportion |
| 2 | 82 | 41 | Volume of cylinder |
| 3 | 81.6 | 40 | Area of circle using $A=\pi r2$ |
| 4 | 81.3 | 39 | Circumference using $C=\pi d=2\pi r$ |
| 5 | 81.1 | 43 | Micrometer reading |
| 6 | 80.4 | 45 | Division, fractions |
| 7 | 80 | 44 | Improper fractions, mixed numbers |
| 8 | 79.6 | 39 | Temperature conversion |
| 9 | 79.2 | 38 | Volume of cube |
| 10 | 78.7 | 37 | Volume of rectangular solid |
| 11 | 78.6 | 44 | Multiplication, fractions |
| 12 | 78.4 | 40 | Area of circle |
| 13 | 77.8 | 42 | Measuring angles |
| 14 | 77.4 | 41 | Decimal equivalents |
| 15 | 77.2 | 44 | Changing common fractions to decimals |
| 17 | 76.6 | 36 | Volume of cone |
| 17 | *76.6 | 36 | Volume of pyramid |
| 17 | 76.6 | 36 | Simple algebraic equation with one unknown |
| 19 | 76 | 38 | Finding a number when a fractional part of it is known |
| 20 | 75.9 | 44 | Reading, writing decimals |
| 21.5 | 75.5 | 40 | Changing decimals to common fractions |
| 21.5 | 75.5 | 37 | Area of trapezoid |
| 23.5 | 74.5 | 38 | Using pi $\pi$ |
| 23.5 | 74.5 | 41 | Reducing mixed numbers to simplest form |
| 25.5 | 74 | 37 | Finding what part one number is of another |
| 25.5 | 74 | 37 | Finding length of unknown side of right triangle |
| 27 | 73.5 | 36 | Area of parallelogram |
| 28 | 73.1 | 38 | Changing decimals to per cents |
| 29.5 | 72.9 | 43 | Subtraction, fractions |
| 29.5 | 72.9 | 35 | Volume of sphere |
| 31 | 72.5 | 37 | Area of triangle |
| 32 | 72.2 | 39 | Division, mixed numbers |
| 33 | 72 | 36 | Acute and obtuse angles |
| 34 | 71.9 | 41 | Multiplication, mixed numbers |
| 36 | 71.4 | 40 | Liquid measure |
| 36 | 71.4 | 35 | Finding a number when a per cent of it is known |
| 36 | 71.4 | 40 | Reading a rule |
| 39 | 71.2 | 37 | Changing per cents to common fractions |
| 39 | 71.2 | 37 | Changing common fractions to per cents |
| 39 | 71.2 | 37 | Finding per cent of a number |
| 41 | 70.7 | 41 | Reducing fractions to lowest terms |
| 42 | 70.6 | 36 | Finding what per cent one number is of another |
| 43 | 70.2 | 40 | Subtraction, mixed numbers |
| 44.5 | 69.8 | 37 | Changing per cent to decimals |
| 44.5 | 69.8 | 37 | Division of decimals |
| 46 | 69.5 | 41 | Addition, fractions |
| 47 | 69.1 | 38 | Comparing fractions |
| 48 | 69 | 40 | Addition, mixed numbers |
| 49.5 | 68.6 | 35 | Area of rectangle |
| 49.5 | 68.6 | 35 | Area of square |
| 51 | 68.1 | 32 | Square root |
| 52 | 67.8 | 40 | Averages |
| 53.5 | 66.7 | 38 | Addition of decimals |
| 53.5 | 66.7 | 36 | Multiplication of decimals |
| 55 | 66 | 35 | Meaning of percentage |
| 56 | 63.8 | 37 | Rounding off decimals |
| 57 | 63.3 | 31 | Squaring a number |
| 58 | 62.5 | 35 | Subtraction of decimals |
| 59.5 | 55.8 | 29 | Multiplying whole numbers and decimals by 10,100,etc. |
| 59.5 | 55.8 | 29 | Dividing whole numbers and decimals by 10,100,etc. |
| 61 | 46.9 | 30 | Division, whole numbers |
| 62 | 43.8 | 28 | Multiplication, whole numbers |
| 63 | 42.9 | 24 | Rounding numbers |
| 64 | 38.2 | 21 | Reading large numbers |
| 65 | 34.9 | 22 | Subtraction, whole numbers |
| 66 | 34.4 | 22 | Addition, whole numbers |

TABLE 7

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF AUTOMOTIVE MECHANIC TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1.5 | 96.6 | 173 | Subtraction, whole numbers |
| 1.5 | 96.6 | 173 | Addition, whole numbers |
| 3 | 96 | 170 | Liquid measure |
| 4 | 94.4 | 167 | Division, whole numbers |
| 5 | 93.8 | 167 | Multiplication, whole numbers |
| 6 | 91.6 | 168 | Addition, fractions |
| 7 | 83.1 | 147 | Meaning of percentage |
| 8 | 85.5 | 153 | Subtraction, fractions |
| 9 | 79.3 | 142 | Addition, mixed numbers |
| 10 | 78.1 | 139 | Division, fractions |
| 11 | 75.8 | 135 | Multiplication, fractions |
| 12 | 75.4 | 135 | Subtraction, mixed numbers |
| 13 | 75.1 | 133 | Reducing fractions to lowest terms |
| [illegible] | 69.3 | 122 | Averages |
| [illegible] | 66.9 | 119 | Reading a rule |
| 16 | 63.5 | 113 | Division, mixed numbers |
| 17 | 62.9 | 112 | Multiplication, mixed numbers |
| 18 | 61.8 | 110 | Finding percent of a number |
| 19 | 61.5 | 110 | Rounding numbers |
| 20 | 60.1 | 107 | Improper fractions, mixed numbers |
| 21 | 59.8 | 107 | Reducing mixed numbers to simplest form |
| 22 | 53.7 | 95 | Reading, writing decimals |
| 23 | 53.4 | 95 | Comparing fractions |
| 24 | 50.6 | 88 | Ratio and proportion |
| 25 | 50 | 89 | Addition of decimals |
| 26 | 48.3 | 86 | Subtraction of decimals |
| 27 | 47.5 | 84 | Changing percent to decimals |
| 28 | 46.3 | 82 | Rounding off decimals |
| 29 | 46.1 | 82 | Finding what percent one number is of another |
| 30 | 45.8 | 81 | Division of decimals |
| 32 | 45.5 | 81 | Multiplying whole numbers and decimals by 10,100,etc. |
| 32 | 45.5 | 81 | Changing decimals to percents |
| 32 | 45.5 | 81 | Changing percents to common fractions |
| 34 | 45.2 | 80 | Changing common fractions to percents |
| 35 | 44.6 | 79 | Area of rectangle |
| 36 | 44.4 | 79 | Multiplication of decimals |
| 37.5 | 44.1 | 78 | Area of square |
| 37.5 | 44.1 | 78 | Dividing whole numbers and decimals by 10,100,etc. |
| 39 | 43.2 | 76 | Changing common fractions to decimals |
| 40 | 41 | 73 | Reading large numbers |
| 41 | 39.3 | 70 | Finding what part one number is of another |
| 42 | 34.5 | 61 | Changing decimals to common fractions |
| 43 | 34.3 | 61 | Finding a number when a percent of it is known |
| 44 | 33.7 | 60 | Decimal equivalents |
| 45 | 31.8 | 56 | Finding a number when a fractional part of it is known |
| 46 | 29.7 | 52 | Temperature conversion |
| 47 | 20 | 35 | Simple algebraic equation with one unknown |
| 48 | 16.7 | 29 | Measuring angles |
| 49 | 15.9 | 28 | Area of circle |
| 50 | 11.4 | 20 | Squaring a number |
| 51 | 9.7 | 17 | Area of triangle |
| 52 | 8.5 | 15 | Volume of cylinder |
| 53.5 | 8 | 14 | Area of circle using $A=\pi r2$ |
| 53.5 | 8 | 14 | Volume of rectangular solid |
| 55 | 7.4 | 13 | Volume of cube |
| 56.5 | 6.8 | 12 | Acute and obtuse angles |
| 56.5 | 6.8 | 12 | Circumference using $C=\pi d=2\pi r$ |
| 58.5 | 6.3 | 11 | Square root |
| 58.5 | 6.3 | 11 | Area of parallelogram |
| 60 | 4.5 | 8 | Using pi $\pi$ |
| 61 | 4 | 7 | Finding length of unknown side of right triangle |
| 62.5 | 2.8 | 5 | Area of trapezoid |
| 62.5 | 2.8 | 5 | Volume of sphere |
| 64.5 | 2.3 | 4 | Micrometer reading |
| 64.5 | 2.3 | 4 | Volume of cone |
| 66 | 1.7 | 3 | Volume of pyramid |

TABLE 8

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING AUTOMOTIVE MECHANIC STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 86.1 | 62 | Ratio and proportion |
| 2 | 84.4 | 65 | Micrometer reading |
| 3 | 83.1 | 59 | Volume of cylinder |
| 5 | 80.8 | 59 | Reducing fractions to lowest terms |
| 5 | 80.3 | 61 | Changing common fractions to decimals |
| 5 | 80.3 | 53 | Temperature conversion |
| 7 | 77 | 57 | Decimal equivalents |
| 8 | 76 | 57 | Reading, writing decimals |
| 9 | 75.8 | 50 | Area of circle using $A=\pi r2$ |
| 10 | 74.6 | 50 | Circumference using $C=\pi d=2\pi r$ |
| 11 | 74.3 | 55 | Comparing fractions |
| 12 | 74 | 57 | Reading a rule |
| 13 | 73.6 | 53 | Changing decimals to common fractions |
| 14 | 73.1 | 49 | Area of circle |
| 15 | 73 | 54 | Subtraction, fractions |
| 16 | 72.9 | 51 | Reducing mixed numbers to simplest form |
| 17 | 72 | 54 | Rounding off decimals |
| 18 | 71.8 | 51 | Improper fractions, mixed numbers |
| 19.5 | 71 | 49 | Finding what per cent one number is of another |
| 19.5 | 71 | 44 | Finding length of unknown side of right triangle |
| 21 | 70.7 | 53 | Addition, fractions |
| 22.5 | 70.6 | 48 | Changing decimals to per cents |
| 22.5 | 70.6 | 48 | Measuring angles |
| 24 | 70.1 | 47 | Changing common fractions to per cents |
| 25 | 69.8 | 44 | Simple algebraic equation with one unknown |
| 26.5 | 69.4 | 50 | Multiplication, fractions |
| 26.5 | 69.4 | 50 | Division, fractions |
| 28.5 | 69.1 | 47 | Changing per cents to common fractions |
| 28.5 | 69.1 | 47 | Changing per cent to decimals |
| 30 | 69 | 49 | Finding per cent of a number |
| 31 | 68.8 | 44 | Volume of cube |
| 32 | 68.4 | 42 | Acute and obtuse angles |
| 33 | 68.3 | 41 | Area of trapezoid |
| 34 | 67.7 | 44 | Finding a number when a fractional part of it is known |
| 36 | 67.2 | 41 | Volume of pyramid |
| 36 | 67.2 | 41 | Volume of sphere |
| 36 | 67.2 | 43 | Finding what part one number is of another |
| 38 | 67.1 | 47 | Addition, mixed numbers |
| 39 | 66.7 | 40 | Volume of cone |
| 40 | 65.6 | 40 | Volume of rectangular solid |
| 41 | 65.2 | 45 | Subtraction, mixed numbers |
| 42.5 | 64.7 | 44 | Division, mixed numbers |
| 42.5 | 64.7 | 44 | Using pi $\pi$ |
| 44 | 64.6 | 42 | Finding a number when a per cent of it is known |
| 45 | 64.2 | 43 | Multiplication, mixed numbers |
| 46 | 63.5 | 47 | Meaning of percentage |
| 47 | 62.9 | 39 | Area of triangle |
| 48.5 | 62.5 | 40 | Squaring a number |
| 48.5 | 62.5 | 45 | Multiplication of decimals |
| 50 | 62.3 | 38 | Square root |
| 51 | 61.4 | 43 | Division of decimals |
| 52.5 | 61.3 | 38 | Area of rectangle |
| 52.5 | 61.3 | 38 | Area of parallelogram |
| 54 | 59.7 | 43 | Averages |
| 55 | 59.5 | 44 | Liquid measure |
| 56 | 59.2 | 45 | Addition of decimals |
| 57 | 58.7 | 44 | Subtraction of decimals |
| 58 | 57.8 | 37 | Area of square |
| 59 | 54.9 | 39 | Dividing whole numbers and decimals by 10, 100,etc. |
| 60 | 53.4 | 39 | Multiplying whole numbers and decimals by 10, 100,etc. |
| 61 | 49.3 | 37 | Division, whole numbers |
| 62 | 47.1 | 32 | Rounding numbers |
| 63 | 46.5 | 33 | Reading large numbers |
| 64 | 44.2 | 34 | Multiplication, whole numbers |
| 65 | 37.7 | 29 | Addition, whole numbers |
| 66 | 36 | 30 | Subtraction, whole numbers |

TABLE 9

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF BUILDING CONSTRUCTION MAINTENANCE TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 3.5 | 100 | 30 | Addition, whole numbers |
| 3.5 | 100 | 30 | Subtraction, whole numbers |
| 3.5 | 100 | 30 | Multiplication, whole numbers |
| 3.5 | 100 | 30 | Division, whole numbers |
| 3.5 | 100 | 30 | Area of square |
| 3.5 | 100 | 30 | Reading a rule |
| 7.5 | 96.7 | 29 | Addition, fractions |
| 7.5 | 96.7 | 29 | Area of rectangle |
| 9 | 96.6 | 28 | Rounding numbers |
| 10 | 93.3 | 28 | Subtraction, fractions |
| 11.5 | 93.1 | 27 | Addition, mixed numbers |
| 11.5 | 93.1 | 27 | Subtraction, mixed numbers |
| 13.5 | 90 | 27 | Reducing fractions to lowest terms |
| 13.5 | 90 | 27 | Reading large numbers |
| 16.5 | 86.7 | 26 | Area of circle |
| 16.5 | 86.7 | 26 | Reading, writing decimals |
| 16.5 | 86.7 | 26 | Multiplication, fractions |
| 16.5 | 86.7 | 26 | Division, fractions |
| 19.5 | 83.3 | 25 | Volume of cube |
| 19.5 | 83.3 | 25 | Area of triangle |
| 21 | 82.8 | 24 | Multiplication, mixed numbers |
| 22 | 82.1 | 23 | Division, mixed numbers |
| 24 | 80 | 24 | Measuring angles |
| 24 | 80 | 24 | Rounding off decimals |
| 24 | 80 | 24 | Improper fractions, mixed numbers |
| 26.5 | 73.3 | 22 | Decimal equivalents |
| 26.5 | 73.3 | 22 | Addition of decimals |
| 30 | 76.7 | 23 | Averages |
| 30 | 76.7 | 23 | Reducing mixed numbers to simplest form |
| 30 | 76.7 | 23 | Changing common fractions to decimals |
| 30 | 76.7 | 23 | Volume of rectangular solid |
| 30 | 76.7 | 23 | Meaning of percentage |
| 33 | 75.9 | 22 | Area of circle using $A = \pi r^2$ |
| 34.5 | 73.3 | 22 | Multiplying whole numbers and decimals by 10,100,etc. |
| 34.5 | 73.3 | 22 | Volume of cylinder |
| 37.5 | 70 | 21 | Changing decimals to common fractions |
| 37.5 | 70 | 21 | Dividing whole numbers and decimals by 10, 100, etc. |
| 37.5 | 70 | 21 | Subtraction of decimals |
| 37.5 | 70 | 21 | Liquid measure |
| 40.5 | 66.7 | 20 | Finding per cent of a number |
| 40.5 | 66.7 | 20 | Finding what per cent one number is of another |
| 42 | 65.5 | 19 | Circumference using $C = \pi d = 2\pi r$ |
| 45 | 63.3 | 19 | Finding length of unknown side of right triangle |
| 45 | 63.3 | 19 | Using pi $\pi$ |
| 45 | 63.3 | 19 | Multiplication of decimals |
| 45 | 63.3 | 19 | Division of decimals |
| 45 | 63.3 | 19 | Ratio and proportion |
| 45 | 63.3 | 19 | Comparing fractions |
| 45 | 63.3 | 19 | Area of parallelogram |
| 50 | 60 | 18 | Finding a number when a per cent of it is known |
| 50 | 60 | 18 | Squaring a number |
| 50 | 60 | 18 | Square root |
| 52 | 58.6 | 17 | Finding a number when a fractional part of it is known |
| 55.5 | 56.7 | 17 | Finding what part one number is of another |
| 55.5 | 56.7 | 17 | Volume of sphere |
| 55.5 | 56.7 | 17 | Volume of cone |
| 55.5 | 56.7 | 17 | Volume of pyramid |
| 55.5 | 56.7 | 17 | Micrometer reading |
| 55.5 | 56.7 | 17 | Acute and obtuse angles |
| 60 | 53.3 | 16 | Simple algebraic equation with one unknown |
| 60 | 53.3 | 16 | Changing per cents to common fractions |
| 60 | 53.3 | 16 | Changing common fractions to per cents |
| 63.5 | 50 | 15 | Area of trapezoid |
| 63.5 | 50 | 15 | Changing decimals to per cents |
| 65 | 46.7 | 14 | Changing per cent to decimals |
| 66 | 36.7 | 11 | Temperature conversion |

TABLE 10

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING BUILDING CONSTRUCTION MAINTENANCE STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 92.6 | 25 | Volume of cylinder |
| 2 | 92.3 | 24 | Volume of sphere |
| 3 | 91.7 | 22 | Temperature conversion |
| 6 | 88.5 | 23 | Volume of cone |
| 6 | 88.5 | 23 | Volume of pyramid |
| 6 | 88.5 | 23 | Simple algebraic equation with one unknown |
| 6 | 88.5 | 23 | Ratio and proportion |
| 6 | 88.5 | 23 | Acute and obtuse angles |
| 9.5 | 88 | 22 | Area of trapezoid |
| 9.5 | 88 | 22 | Micrometer reading |
| 11 | 86.2 | 25 | Division, mixed numbers |
| 14 | 84.6 | 22 | $C=\pi d=2\pi r$ |
| 14 | 84.6 | 22 | Changing per cents to common fractions |
| 14 | 84.6 | 22 | Changing common fractions to per cents |
| 14 | 84.6 | 22 | Finding length of unknown side of right triangle |
| 14 | 84.6 | 22 | Measuring angles |
| 18 | 83.3 | 25 | Improper fractions, mixed numbers |
| 18 | 83.3 | 25 | Reducing mixed numbers to simplest form |
| 18 | 83.3 | 25 | Division, fractions |
| 20 | 82.8 | 24 | Changing common fractions to decimals |
| 22 | 82.1 | 23 | Area of triangle |
| 22 | 82.1 | 23 | Changing decimals to per cents |
| 22 | 82.1 | 23 | Changing decimals to common fractions |
| 24 | 81.5 | 22 | Square root |
| 25 | 80 | 24 | Comparing fractions |
| 26 | 79.3 | 23 | Multiplication, mixed numbers |
| 27.5 | 78.6 | 22 | Changing per cent to decimals |
| 27.5 | 78.6 | 22 | Decimal equivalents |
| 29.5 | 77.8 | 21 | Area of circle |
| 29.5 | 77.8 | 21 | Area of circle using $A=\pi r2$ |
| 31.5 | 76.9 | 20 | Finding a number when a fractional part of it is known |
| 31.5 | 76.9 | 20 | Area of parallelogram |
| 34 | 76.7 | 23 | Reducing fractions to lowest terms |
| 34 | 76.7 | 23 | Subtraction, fractions |
| 34 | 76.7 | 23 | Multiplication, fractions |
| 36 | 76 | 19 | Liquid measure |
| 37 | 75.9 | 22 | Subtraction, mixed numbers |
| 38 | 74.1 | 20 | Finding per cent of a number |
| 40.5 | 73.1 | 19 | Using pi $\pi$ |
| 40.5 | 73.1 | 19 | Finding what per cent one number is of another |
| 40.5 | 73.1 | 19 | Finding a number when a per cent of it is known |
| 40.5 | 73.1 | 19 | Finding what part one number is of another |
| 43.5 | 72.4 | 21 | Addition, mixed numbers |
| 43.5 | 72.4 | 21 | Division of decimals |
| 45 | 70.4 | 19 | Squaring a number |
| 46.5 | 70 | 21 | Reading, writing decimals |
| 46.5 | 70 | 21 | Addition, fractions |
| 48 | 67.9 | 19 | Volume of rectangular solid |
| 50 | 69 | 20 | Multiplication of decimals |
| 50 | 69 | 20 | Reading a rule |
| 50 | 69 | 20 | Volume of cube |
| 52.5 | 65.5 | 19 | Rounding off decimals |
| 52.5 | 65.5 | 19 | Averages |
| 54 | 59.3 | 16 | Meaning of percentage |
| 55 | 55.2 | 16 | Subtraction of decimals |
| 56 | 53.6 | 15 | Dividing whole numbers and decimals by 10,100,etc. |
| 57 | 51.7 | 15 | Addition of decimals |
| 58 | 50 | 14 | Rounding numbers |
| 59 | 46.4 | 13 | Area of rectangle |
| 60 | 44.8 | 13 | Area of square |
| 61.5 | 43.3 | 13 | Multiplication, whole numbers |
| 61.5 | 43.3 | 13 | Division, whole numbers |
| 63 | 42.9 | 12 | Multiplying whole numbers and decimals by 10,100,etc. |
| 64.5 | 26.7 | 8 | Addition, whole numbers |
| 64.5 | 26.7 | 8 | Subtraction, whole numbers |
| 66 | 30 | 9 | Reading large numbers |

TABLE 11

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF CARPENTRY TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 5.5 | 100 | 49 | Reading a rule |
| 5.5 | 100 | 49 | Division, whole numbers |
| 5.5 | 100 | 48 | Multiplication, whole numbers |
| 5.5 | 100 | 48 | Reducing fractions to lowest terms |
| 5.5 | 100 | 48 | Subtraction, whole numbers |
| 5.5 | 100 | 48 | Addition, whole numbers |
| 5.5 | 100 | 48 | Subtraction, mixed numbers |
| 5.5 | 100 | 48 | Addition, mixed numbers |
| 5.5 | 100 | 49 | Subtraction, fractions |
| 5.5 | 100 | 49 | Addition, fractions |
| 11 | 97.9 | 47 | Measuring angles |
| 12 | 98 | 48 | Reducing mixed numbers to simplest form |
| 13.5 | 95.9 | 47 | Multiplication, fractions |
| 13.5 | 95.9 | 47 | Area of square |
| 15 | 95.8 | 46 | Division, mixed numbers |
| 16 | 95.8 | 46 | Multiplication, mixed numbers |
| 16 | 95.8 | 40 | Finding length of unknown side of right triangle |
| 18 | 93.9 | 46 | Division, fractions |
| 19 | 93.8 | 45 | Area of rectangle |
| 20 | 91.8 | 45 | Changing common fractions to decimals |
| 21 | 91.7 | 44 | Improper fractions, mixed numbers |
| 22.5 | 89.8 | 44 | Square root |
| 22.5 | 89.8 | 44 | Rounding off decimals |
| 25 | 89.6 | 43 | Reading, writing decimals |
| 25 | 89.6 | 43 | Area of triangle |
| 25 | 89.6 | 43 | Averages |
| 27.5 | 89.4 | 42 | Subtraction of decimals |
| 27.5 | 89.4 | 42 | Addition of decimals |
| 29 | 87.8 | 43 | Squaring a number |
| 30.5 | 87.5 | 42 | Volume of cube |
| 30.5 | 87.5 | 42 | Changing decimals to common fractions |
| 32 | 87.2 | 41 | Multiplication of decimals |
| 33 | 85.7 | 42 | Rounding numbers |
| 34 | 85.4 | 41 | Decimal equivalents |
| 35.5 | 85.1 | 40 | Volume of rectangular solid |
| 35.5 | 85.1 | 40 | Division of decimals |
| 37 | 83.3 | 40 | Comparing fractions |
| 38.5 | 83 | 39 | Using pi $\pi$ |
| 38.5 | 83 | 39 | Area of circle using $A = \pi r^2$ |
| 39 | 82.6 | 38 | Area of circle |
| 40 | 81.4 | 35 | Finding a number when a fractional part of it is known |
| 41.5 | 80.9 | 38 | Multiplying whole numbers and decimals by 10, 100, etc. |
| 41.5 | 80.9 | 38 | Dividing whole numbers and decimals by 10, 100, etc. |
| 43 | 79.5 | 35 | Acute and obtuse angles |
| 44.5 | 78.7 | 37 | Circumference using $C = \pi d = 2\pi r$ |
| 44.5 | 78.7 | 37 | Area of parallelogram |
| 46 | 75.6 | 34 | Changing per cent to decimals |
| 47 | 75 | 33 | Ratio and proportion |
| 48 | 74.4 | 32 | Finding what part one number is of another |
| 49 | 73.3 | 33 | Meaning of percentage |
| 51.5 | 68.9 | 31 | Changing common fractions to per cents |
| 51.5 | 68.9 | 31 | Changing decimals to per cents |
| 51.5 | 69.8 | 30 | Changing per cents to common fractions |
| 51.5 | 69.8 | 30 | Finding per cent of a number |
| 54 | 68.9 | 31 | Volume of cylinder |
| 55.5 | 66.7 | 32 | Reading large numbers |
| 55.5 | 66.7 | 30 | Finding a number when a per cent of it is known |
| 57.5 | 65.9 | 29 | Area of trapezoid |
| 57.5 | 65.9 | 29 | Finding what per cent one number is of another |
| 59 | 55.6 | 25 | Simple algebraic equation with one unknown |
| 60 | 55.3 | 24 | Volume of pyramid |
| 61.5 | 48.9 | 22 | Volume of cone |
| 61.5 | 48.9 | 22 | Volume of sphere |
| 63 | 45.7 | 21 | Liquid measure |
| 64 | 17.8 | 8 | Temperature conversion |
| 65 | 15.9 | 7 | Micrometer reading |

TABLE 12

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING CARPENTRY STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 95.7 | 45 | Square root |
| 2 | 90 | 36 | Acute and obtuse angles |
| 3 | 89.5 | 34 | Volume of pyramid |
| 4 | 89.2 | 33 | Volume of sphere |
| 5 | 88.6 | 39 | Using pi $\pi$ |
| 6.5 | 88.4 | 38 | Finding a number when a fractional part of it is known |
| 6.5 | 88.4 | 38 | Area of circle using $A = \pi r^2$ |
| 8 | 89.4 | 42 | Finding length of unknown side of right triangle |
| 9 | 87.8 | 36 | Volume of cylinder |
| 10 | 87.5 | 35 | Area of trapezoid |
| 11 | 87.2 | 34 | Simple algebraic equation with one unknown |
| 12 | 86.8 | 33 | Volume of cone |
| 13 | 86.4 | 38 | Circumference using $C = \pi d = 2\pi r$ |
| 14.5 | 85.4 | 41 | Division, mixed numbers |
| 14.5 | 85.4 | 35 | Changing common fractions to per cents |
| 16 | 85.1 | 40 | Improper fractions, mixed numbers |
| 17 | 85 | 34 | Changing per cents to common fractions |
| 18 | 84.8 | 39 | Changing decimals to common fractions |
| 19 | 84.1 | 37 | Decimal equivalents |
| 20.5 | 83.7 | 41 | Multiplication, fractions |
| 20.5 | 83.7 | 41 | Division, fractions |
| 22 | 83.3 | 35 | Area of circle |
| 23 | 83 | 39 | Measuring angles |
| 25 | 82.9 | 34 | Finding per cent of a number |
| 25 | 82.9 | 34 | Finding what per cent one number is of another |
| 25 | 82.9 | 34 | Finding what part one number is of another |
| 27 | 82.2 | 37 | Volume of cube |
| 28.5 | 80.9 | 38 | Multiplication, mixed numbers |
| 28.5 | 80.9 | 38 | Reducing mixed numbers to simplest form |
| 30.5 | 80.5 | 33 | Changing decimals to per cents |
| 30.5 | 80.5 | 33 | Finding a number when a per cent of it is known |
| 32.5 | 80.4 | 37 | Area of triangle |
| 32.5 | 80.4 | 37 | Comparing fractions |
| 34 | 80 | 32 | Ratio and proportion |
| 36 | 78.7 | 37 | Changing common fractions to decimals |
| 36 | 78.7 | 37 | Reducing fractions to lowest terms |
| 36 | 78.7 | 37 | Subtraction, mixed numbers |
| 39 | 77.6 | 38 | Subtraction, fractions |
| 39 | 76.6 | 36 | Addition mixed numbers |
| 39 | 76.6 | 36 | Squaring a number |
| 41 | 75.6 | 31 | Changing per cent to decimals |
| 42 | 75 | 33 | Volume of rectangular solid |
| 43 | 73.8 | 31 | Area of parallelogram |
| 44 | 72.1 | 31 | Dividing whole numbers and decimals by 10, 100, etc. |
| 45 | 71.4 | 35 | Addition, fractions |
| 46 | 71.1 | 32 | Reading, writing decimals |
| 47 | 69.8 | 30 | Division of decimals |
| 48 | 68.1 | 32 | Rounding off decimals |
| 49 | 67.6 | 25 | Micrometer reading |
| 50 | 65.3 | 32 | Reading a rule |
| 51 | 65.1 | 28 | Multiplying whole numbers and decimals by 10,100,etc. |
| 52 | 64.6 | 31 | Averages |
| 53 | 61.5 | 24 | Liquid measure |
| 54 | 61.4 | 27 | Multiplication of decimals |
| 55 | 59.5 | 25 | Meaning of percentage |
| 56.5 | 56.8 | 25 | Addition of decimals |
| 56.5 | 56.8 | 25 | Subtraction of decimals |
| 58 | 56.5 | 26 | Rounding numbers |
| 59 | 55.3 | 26 | Area of square |
| 60 | 55.1 | 27 | Division, whole numbers |
| 61 | 54.1 | 20 | Temperature conversion |
| 62 | 50 | 23 | Area of rectangle |
| 63 | 47.9 | 23 | Multiplication, whole numbers |
| 64 | 46.5 | 20 | Reading large numbers |
| 65 | 35.4 | 17 | Subtraction, whole numbers |
| 66 | 31.3 | 15 | Addition, whole numbers |

TABLE 13
RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF COSMETOLOGY TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 98 | 49 | Addition, whole numbers |
| 2 | 92 | 46 | Subtraction, whole numbers |
| 3 | 89.8 | 44 | Liquid measure |
| 4 | 87.8 | 43 | Multiplication, whole numbers |
| 5 | 85.7 | 42 | Division, whole numbers |
| 6 | 75.6 | 34 | Meaning of percentage |
| 7 | 69.6 | 32 | Averages |
| 8 | 61.7 | 29 | Finding per cent of a number |
| 9 | 61.2 | 30 | Addition, fractions |
| 10 | 60.9 | 28 | Addition, mixed numbers |
| 11 | 58.3 | 28 | Subtraction, fractions |
| 12 | 55.6 | 25 | Reading, writing decimals |
| 13 | 54.3 | 25 | Subtraction, mixed numbers |
| 14 | 51 | 25 | Multiplication, fractions |
| 15 | 50 | 23 | Addition of decimals |
| 16 | 48.9 | 23 | Division, fractions |
| 17 | 48.8 | 21 | Rounding numbers |
| 18 | 47.8 | 22 | Finding what per cent one number is of another |
| 19 | 46.7 | 21 | Changing decimals to per cents |
| 20 | 45.7 | 21 | Subtraction of decimals |
| 21 | 45.5 | 20 | Changing per cent to decimals |
| 22 | 44.4 | 20 | Multiplication, mixed numbers |
| 23.5 | 43.2 | 19 | Reading large numbers |
| 23.5 | 43.2 | 19 | Multiplying whole numbers and decimals by 10, 100,etc. |
| 25.5 | 40 | 18 | Multiplication of decimals |
| 25.5 | 40 | 18 | Division of decimals |
| 27 | 37.8 | 17 | Division, mixed numbers |
| 28 | 36.8 | 16 | Changing common fractions to per cents |
| 29 | 35.7 | 15 | Dividing whole numbers and decimals by 10, 100, etc. |
| 30 | 35.6 | 16 | Reducing fractions to lowest terms |
| 31 | 34.9 | 15 | Changing per cents to common fractions |
| 33 | 34.1 | 15 | Comparing fractions |
| 33 | 31.1 | 14 | Improper fractions, mixed numbers |
| 33 | 34.1 | 15 | Rounding off decimals |
| 35.5 | 32.6 | 14 | Finding a number when a per cent of it is known |
| 35.5 | 32.6 | 14 | Decimal equivalents |
| 37 | 31 | 13 | Ratio and proportion |
| 38.5 | 27.9 | 12 | Finding what part one number is of another |
| 38.5 | 27.9 | 12 | Changing common fractions to decimals |
| 40 | 25.6 | 11 | Changing decimals to common fractions |
| 41 | 25 | 11 | Reducing mixed numbers to simplest form |
| 42 | 21.4 | 9 | Finding a number when a fractional part of it is known |
| 43 | 20.9 | 9 | Reading a rule |
| 44 | 14.6 | 6 | Temperature conversion |
| 45.5 | 11.6 | 5 | Measuring angles |
| 45.5 | 11.6 | 5 | Area of rectangle |
| 47.5 | 9.3 | 4 | Area of square |
| 47.5 | 9.3 | 4 | Area of circle |
| 49 | 7.1 | 3 | Squaring a number |
| 50.5 | 7 | 3 | Area of triangle |
| 50.5 | 7 | 3 | Square root |
| 52.5 | 4.9 | 2 | Micrometer reading |
| 52.5 | 4.9 | 2 | Simple algebraic equation with one unknown |
| 54 | 4.8 | 2 | Area of parallelogram |
| 59 | 4.7 | 2 | Volume of rectangular solid |
| 59 | 4.7 | 2 | Volume of cube |
| 59 | 4.7 | 2 | Volume of cylinder |
| 59 | 4.7 | 2 | Volume of sphere |
| 59 | 4.7 | 2 | Volume of cone |
| 59 | 4.7 | 2 | Volume of pyramid |
| 59 | 4.7 | 2 | Acute and obtuse angles |
| 59 | 4.7 | 2 | Finding length of unknown side of right triangle |
| 59 | 4.7 | 2 | Area of trapezoid |
| 64 | 2.4 | 1 | Area of circle using $A = \pi r^2$ |
| 65.5 | 0 | 0 | Using pi $\pi$ |
| 65.5 | 0 | 0 | Circumference using $C = \pi d = 2\pi r$ |

TABLE 14

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING COSMETOLOGY STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 71.8 | 28 | Meaning of percentage |
| 2 | 65.1 | 28 | Addition, fractions |
| 3 | 61.9 | 26 | Subtraction, fractions |
| 4 | 61.6 | 22 | Changing decimals to per cents |
| 5 | 61.5 | 24 | Finding per cent of a number |
| 6 | 57.9 | 22 | Addition, mixed numbers |
| 7 | 57.4 | 27 | Liquid measure |
| 8 | 56.8 | 21 | Changing common fractions to decimals |
| 9 | 56.1 | 23 | Averages |
| 10.5 | 55.3 | 21 | Subtraction, mixed numbers |
| 10.5 | 55.3 | 21 | Reducing fractions to lowest terms |
| 12 | 55 | 22 | Division, fractions |
| 13 | 54.8 | 23 | Multiplication, fractions |
| 14.5 | 54.1 | 20 | Finding what per cent one number is of another |
| 14.5 | 54.1 | 20 | Comparing fractions |
| 16.5 | 53.1 | 17 | Changing decimals to common fractions |
| 16.5 | 53.1 | 17 | Decimal equivalents |
| 18.5 | 52.6 | 20 | Reading, writing decimals |
| 18.5 | 52.6 | 20 | Rounding off decimals |
| 21 | 51.4 | 19 | Multiplication, mixed numbers |
| 21 | 51.4 | 18 | Division of decimals |
| 21 | 51.4 | 18 | Changing per cent to decimals |
| 24.5 | 50 | 18 | Addition of decimals |
| 24.5 | 50 | 16 | Finding a number when a per cent of it is known |
| 24.5 | 50 | 17 | Multiplying whole numbers and decimals by 10,100,etc. |
| 24.5 | 50 | 18 | Improper fractions, mixed numbers |
| 27 | 48.9 | 23 | Division, whole numbers |
| 28 | 48.6 | 18 | Division, mixed numbers |
| 29 | 48.5 | 16 | Reading a rule |
| 30 | 47.2 | 17 | Subtraction of decimals |
| 31 | 47.1 | 16 | Multiplication of decimals |
| 32 | 46.9 | 15 | Dividing whole numbers and decimals by 10.100,etc. |
| 33.5 | 44.1 | 15 | Changing per cents to common fractions |
| 33.5 | 44.1 | 15 | Changing common fractions to per cents |
| 37 | 43.8 | 14 | Area of trapezoid |
| 37 | 43.8 | 14 | Area of rectangle |
| 37 | 43.8 | 14 | Area of square |
| 37 | 43.8 | 14 | Area of parallelogram |
| 37 | 43.8 | 21 | Addition. whole numbers |
| 40 | 43.2 | 16 | Ratio and proportion |
| 41 | 42.6 | 20 | Multiplication, whole numbers |
| 45 | 41.9 | 13 | Area of circle using $A = \pi r^2$ |
| 45 | 41.9 | 13 | Volume of rectangular solid |
| 45 | 41.9 | 13 | Volume of cube |
| 45 | 41.9 | 13 | Volume of cylinder |
| 45 | 41.9 | 13 | Volume of sphere |
| 45 | 41.9 | 13 | Volume of cone |
| 45 | 41.9 | 13 | Volume of pyramid |
| 51 | 40.6 | 13 | Area of triangle |
| 51 | 40.6 | 13 | Area of circle |
| 51 | 40.6 | 13 | Finding what part one number is of another |
| 51 | 40.6 | 13 | Finding a number when a fractional part of it is known |
| 51 | 40.6 | 13 | Circumference using $C = \pi d = 2\pi r$ |
| 54.5 | 40 | 14 | Reducing mixed numbers to simplest form |
| 54.5 | 40 | 12 | Square root |
| 56 | 39.6 | 19 | Subtraction, whole numbers |
| 57.5 | 39.4 | 13 | Using pi $\pi$ |
| 57.5 | 39.4 | 13 | Finding length of unknown side of right triangle |
| 59 | 38.2 | 13 | Temperature conversion |
| 60 | 37.5 | 12 | Acute and obtuse angles |
| 61 | 36.7 | 11 | Simple algebraic equation with one unknown |
| 62 | 36.4 | 12 | Measuring angles |
| 63 | 34.5 | 10 | Micrometer reading |
| 64 | 33.3 | 10 | Squaring a number |
| 65 | 30.8 | 12 | Rounding numbers |
| 66 | 28.2 | 11 | Reading large numbers |

TABLE 15

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF DRAFTING TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 8 | 100 | 43 | Rounding off decimals |
| 8 | 100 | 43 | Reading, writing decimals |
| 8 | 100 | 43 | Reducing mixed numbers to simplest form |
| 8 | 100 | 44 | Subtraction, whole numbers |
| 8 | 100 | 43 | Subtraction, mixed numbers |
| 8 | 100 | 43 | Addition. whole numbers |
| 8 | 100 | 43 | Addition, mixed numbers |
| 8 | 100 | 44 | Subtraction, fractions |
| 8 | 100 | 43 | Changing common fractions to decimals |
| 8 | 100 | 44 | Addition. fractions |
| 8 | 100 | 44 | Subtraction of decimals |
| 8 | 100 | 44 | Addition of decimals |
| 8 | 100 | 44 | Decimal equivalents |
| 8 | 100 | 44 | Reading a rule |
| 8 | 100 | 44 | Measuring angles |
| 19 | 97.7 | 43 | Changing decimals to common fractions |
| 19 | 97.7 | 42 | Improper fractions, mixed numbers |
| 19 | 97.7 | 43 | Reducing fractions to lowest terms |
| 19 | 97.7 | 43 | Multiplication, whole numbers |
| 19 | 97.7 | 43 | Division, whole numbers |
| 19 | 97.7 | 43 | Acute and obtuse angles |
| 19 | 97.7 | 42 | Rounding numbers |
| 24 | 95.5 | 42 | Area of rectangle |
| 24 | 95.5 | 42 | Circumference using $C = \pi d = 2\pi r$ |
| 24 | 95.5 | 42 | Area of square |
| 28 | 95.3 | 41 | Division. mixed numbers |
| 28 | 95.3 | 41 | Multiplication, fractions |
| 28 | 95.3 | 41 | Division, fractions |
| 28 | 95.3 | 41 | Division of decimals |
| 28 | 95.3 | 41 | Using pi $\pi$ |
| 31 | 93.2 | 41 | Finding length of unknown side of right triangle |
| 33.5 | 93 | 40 | Multiplication of decimals |
| 33.5 | 93 | 40 | Comparing fractions |
| 33.5 | 93 | 40 | Area of circle using $A = \pi r^2$ |
| 33.5 | 93 | 40 | Area of triangle |
| 36 | 92.9 | 39 | Multiplication mixed numbers |
| 37 | 90.9 | 40 | Squaring a number |
| 39.5 | 90.7 | 39 | Multiplying whole numbers and decimals by 10,100.etc. |
| 39.5 | 90.7 | 39 | Dividing whole numbers and decimals by 10, 100, etc. |
| 39.5 | 90.7 | 39 | Area of circle |
| 39.5 | 90.7 | 39 | Area of parallelogram |
| 42 | 88.6 | 39 | Square root |
| 44 | 88.4 | 38 | Area of trapezoid |
| 44 | 88.4 | 38 | Simple algebraic equation with one unknown |
| 44 | 88.4 | 38 | Reading large numbers |
| 47 | 86 | 37 | Volume of rectangular solid |
| 47 | 86 | 37 | Volume of cube |
| 47 | 86 | 37 | Finding a number when a fractional part of it is known |
| 49.5 | 84.1 | 37 | Changing decimals to per cents |
| 49.5 | 84.1 | 37 | Changing per cent to decimals |
| 52.5 | 83.7 | 36 | Volume of cylinder |
| 52.5 | 83.7 | 36 | Changing per cents to common fractions |
| 52.5 | 83.7 | 36 | Changing common fractions to per cents |
| 52.5 | 83.7 | 36 | Finding what part one number is of another |
| 55 | 83.3 | 35 | Ratio and proportion |
| 56 | 81.8 | 36 | Meaning of percentage |
| 57.5 | 81.4 | 35 | Finding per cent of a number |
| 57.5 | 81.4 | 35 | Finding a number when a per cent of it is known |
| 59 | 79.5 | 35 | Micrometer reading |
| 61.5 | 79.1 | 34 | Finding what per cent one number is of another |
| 61.5 | 79.1 | 34 | Volume of pyramid |
| 61.5 | 79.1 | 34 | Volume of sphere |
| 61.5 | 79.1 | 34 | Volume of cone |
| 64 | 72.1 | 31 | Averages |
| 65 | 46.5 | 20 | Liquid measure |
| 66 | 44.2 | 19 | Temperature conversion |

TABLE 16

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING DRAFTING STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1.5 | 84.6 | 33 | Volume of cone |
| 1.5 | 84.6 | 33 | Volume of pyramid |
| 3 | 84.2 | 32 | Volume of sphere |
| 4 | 82.1 | 32 | Volume of cylinder |
| 5 | 80 | 32 | Area of trapezoid |
| 6.5 | 78.6 | 33 | Finding a number when a fractional part of it is known |
| 6.5 | 78.6 | 33 | Finding length of unknown side of right triangle |
| 8 | 77.8 | 28 | Temperature conversion |
| 9 | 77.5 | 31 | Ratio and proportion |
| 10.5 | 76.2 | 32 | Finding what part one number is of another |
| 10.5 | 76.2 | 32 | Simple algebraic equation with one unknown |
| 12 | 74.4 | 32 | Changing common fractions to decimals |
| 13 | 73.8 | 31 | Square root |
| 14 | 73.2 | 30 | Micrometer reading |
| 15.5 | 72.5 | 29 | Changing per cents to common fractions |
| 15.5 | 72.5 | 29 | Area of parallelogram |
| 17 | 71.4 | 30 | Changing decimals to common fractions |
| 18.5 | 70.7 | 29 | Changing common fractions to per cents |
| 18.5 | 70.7 | 29 | Finding a number when a per cent of it is known |
| 20 | 69.2 | 27 | Area of circle using $A = \pi r^2$ |
| 22 | 69 | 29 | Acute and obtuse angles |
| 22 | 69 | 29 | Decimal equivalents |
| 22 | 69 | 29 | Measuring angles |
| 24 | 66.7 | 28 | Circumference using $C = \pi d = 2\pi r$ |
| 25 | 65.9 | 27 | Finding what per cent one number is of another |
| 26 | 65.1 | 28 | Reducing fractions to lowest terms |
| 27.5 | 65 | 26 | Area of circle |
| 27.5 | 65 | 26 | Area of triangle |
| 30.5 | 63.4 | 26 | Division of decimals |
| 30.5 | 63.4 | 26 | Changing decimals to per cents |
| 30.5 | 63.4 | 26 | Comparing fractions |
| 30.5 | 63.4 | 26 | Using pi $\pi$ |
| 33.5 | 62.8 | 27 | Reducing mixed numbers to simplest form |
| 33.5 | 62.8 | 27 | Division, mixed numbers |
| 35 | 62.5 | 25 | Finding per cent of a number |
| 36 | 61.5 | 24 | Volume of cube |
| 37.5 | 60.5 | 26 | Reading, writing decimals |
| 37.5 | 60.5 | 26 | Improper fractions, mixed numbers |
| 39 | 60 | 21 | Liquid measure |
| 40 | 59.5 | 25 | Rounding off decimals |
| 41.5 | 58.5 | 24 | Meaning of percentage |
| 41.5 | 58.5 | 24 | Changing per cent to decimals |
| 44 | 58.1 | 25 | Reading a rule |
| 44 | 58.1 | 25 | Addition, mixed numbers |
| 44 | 58.1 | 25 | Subtraction, mixed numbers |
| 46.5 | 57.1 | 24 | Multiplication, mixed numbers |
| 46.5 | 57.1 | 24 | Division, fractions |
| 48 | 56.4 | 22 | Volume of rectangular solid |
| 49 | 55.8 | 24 | Subtraction, fractions |
| 50 | 54.8 | 23 | Multiplication, fractions |
| 51 | 51.2 | 22 | Addition, fractions |
| 52 | 47.5 | 19 | Averages |
| 53 | 45.2 | 19 | Squaring a number |
| 54 | 45 | 18 | Dividing whole numbers and decimals by 10,100,etc. |
| 55 | 42.9 | 18 | Area of rectangle |
| 56.5 | 41.5 | 17 | Area of square |
| 56.5 | 41.5 | 17 | Multiplication of decimals |
| 58 | 40 | 16 | Multiplying whole numbers and decimals by 10,100,etc. |
| 59 | 38.1 | 16 | Subtraction of decimals |
| 60 | 35.7 | 15 | Addition of decimals |
| 61 | 34.9 | 15 | Rounding numbers |
| 62 | 31 | 13 | Division, whole numbers |
| 63 | 23.3 | 10 | Multiplication, whole numbers |
| 64 | 20.9 | 9 | Reading large numbers |
| 65 | 14.3 | 6 | Subtraction, whole numbers |
| 66 | 11.6 | 5 | Addition, whole numbers |

TABLE 17

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF DRESSMAKING RELATED TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 100 | 20 | Addition, whole numbers |
| 2.5 | 95 | 19 | Subtraction, whole numbers |
| 2.5 | 95 | 19 | Multiplication, whole numbers |
| 4.5 | 90 | 18 | Division, whole numbers |
| 4.5 | 90 | 18 | Addition, fractions |
| 6 | 85 | 17 | Subtraction, fractions |
| 7 | 77.8 | 14 | Rounding numbers |
| 8 | 75 | 15 | Division, fractions |
| 9 | 72.2 | 13 | Reading a rule |
| 10.5 | 70 | 14 | Reducing fractions to lowest terms |
| 10.5 | 70 | 14 | Multiplication, fractions |
| 12 | 68.4 | 13 | Reading large numbers |
| 13 | 63.2 | 12 | Addition, mixed numbers |
| 14.5 | 57.9 | 11 | Averages |
| 14.5 | 57.9 | 11 | Subtraction, mixed numbers |
| 16 | 52.9 | 9 | Meaning of percentage |
| 18 | 52.6 | 10 | Reducing mixed numbers to simplest form |
| 18 | 52.6 | 10 | Multiplication, mixed numbers |
| 18 | 52.6 | 10 | Division, mixed numbers |
| 20.5 | 50 | 9 | Reading, writing decimals |
| 20.5 | 50 | 9 | Comparing fractions |
| 22.5 | 41.2 | 7 | Rounding off decimals |
| 22.5 | 41.2 | 7 | Measuring angles |
| 24 | 38.9 | 7 | Improper fractions, mixed numbers |
| 26 | 35.3 | 6 | Multiplying whole numbers and decimals by 10, 100, etc. |
| 26 | 35.3 | 6 | Changing common fractions to per cents |
| 26 | 35.3 | 6 | Finding per cent of a number |
| 28 | 29.4 | 5 | Changing decimals to per cents |
| 29.5 | 27.8 | 5 | Changing common fractions to decimals |
| 29.5 | 27.8 | 5 | Area of square |
| 34.5 | 23.5 | 4 | Ratio and proportion |
| 34.5 | 23.5 | 4 | Dividing whole numbers and decimals by 10, 100, etc. |
| 34.5 | 23.5 | 4 | Addition of decimals |
| 34.5 | 23.5 | 4 | Subtraction of decimals |
| 34.5 | 23.5 | 4 | Multiplication of decimals |
| 34.5 | 23.5 | 4 | Changing per cents to decimals |
| 34.5 | 23.5 | 4 | Finding what per cent one number is of another |
| 34.5 | 23.5 | 4 | Changing per cents to common fractions |
| 39 | 18.8 | 3 | Acute and obtuse angles |
| 42.5 | 17.6 | 3 | Area of circle |
| 42.5 | 17.6 | 3 | Division of decimals |
| 42.5 | 17.6 | 3 | Changing decimals to common fractions |
| 42.5 | 17.6 | 3 | Finding a number when a per cent of it is known |
| 42.5 | 17.6 | 3 | Finding what part one number is of another |
| 42.5 | 17.6 | 3 | Finding a number when a fractional part of it is known |
| 46.5 | 16.7 | 3 | Area of rectangle |
| 46.5 | 16.7 | 3 | Circumference using $C = \pi D = 2\pi r$ |
| 48.5 | 11.8 | 2 | Decimal equivalents |
| 48.5 | 11.8 | 2 | Squaring a number |
| 50.5 | 11.1 | 2 | Using pi $\pi$ |
| 50.5 | 11.1 | 2 | Area of parallelogram |
| 53 | 5.9 | 1 | Liquid measure |
| 53 | 5.9 | 1 | Finding length of unknown side of right triangle |
| 53 | 5.9 | 1 | Area of circle using $A = \pi r^2$ |
| 55 | 5.6 | 1 | Area of triangle |
| 61 | 0 | 0 | Temperature conversion |
| 61 | 0 | 0 | Area of trapezoid |
| 61 | 0 | 0 | Square root |
| 61 | 0 | 0 | Volume of rectangular solid |
| 61 | 0 | 0 | Volume of cube |
| 61 | 0 | 0 | Volume of cylinder |
| 61 | 0 | 0 | Volume of sphere |
| 61 | 0 | 0 | Volume of cone |
| 61 | 0 | 0 | Volume of pyramid |
| 61 | 0 | 0 | Simple algebraic equation with one unknown |
| 61 | 0 | 0 | Micrometer reading |

TABLE 18

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING DRESSMAKING RELATED STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 93.2 | 14 | Improper fractions, mixed numbers |
| 4 | 92.9 | 14 | Finding a number when a fractional part of it is known |
| 4 | 92.9 | 13 | Changing per cents to common fractions |
| 4 | 92.9 | 13 | Changing common fractions to per cents |
| 4 | 92.9 | 13 | Changing decimals to common fractions |
| 4 | 92.9 | 13 | Finding what per cent one number is of another |
| 7.5 | 92.3 | 12 | Rounding off decimals |
| 7.5 | 92.3 | 12 | Changing common fractions to decimals |
| 9 | 90 | 18 | Addition, fractions |
| 10.5 | 87.5 | 14 | Comparing fractions |
| 10.5 | 87.5 | 14 | Subtraction, mixed numbers |
| 12.5 | 86.7 | 13 | Changing per cent to decimals |
| 12.5 | 86.7 | 13 | Changing decimals to per cents |
| 17.5 | 85.7 | 12 | Ratio and proportion |
| 17.5 | 85.7 | 12 | Measuring angles |
| 17.5 | 85.7 | 12 | Acute and obtuse angles |
| 17.5 | 85.7 | 12 | Finding length of unknown side of right triangle |
| 17.5 | 85.7 | 12 | Area of circle |
| 17.5 | 85.7 | 12 | Decimal equivalents |
| 17.5 | 85.7 | 12 | Finding a number when a per cent of it is known |
| 17.5 | 85.7 | 12 | Finding what part one number is of another |
| 22.5 | 85 | 17 | Division, fractions |
| 22.5 | 85 | 17 | Subtraction, fractions |
| 27.5 | 84.6 | 11 | Volume of rectangular solid |
| 27 | 84.6 | 11 | Volume of cube |
| 27 | 84.6 | 11 | Volume of cylinder |
| 27 | 84.6 | 11 | Volume of sphere |
| 27 | 84.6 | 11 | Volume of cone |
| 27 | 84.6 | 11 | Volume of pyramid |
| 27 | 84.6 | 11 | Simple algebraic equation with one unknown |
| 31 | 84.2 | 16 | Multiplication, fractions |
| 33.5 | 81.3 | 13 | Reducing mixed numbers to simplest form |
| 33.5 | 81.3 | 13 | Addition, mixed umbers |
| 33.5 | 81.3 | 13 | Multiplication, mixed numbers |
| 33.5 | 81.3 | 13 | Division, mixed numbers |
| 36 | 80 | 12 | Area of square |
| 38.5 | 78.6 | 11 | Temperature conversion |
| 38.5 | 78.6 | 11 | Area of trapezoid |
| 38.5 | 78.6 | 11 | Square root |
| 38.5 | 78.6 | 11 | Multiplication of decimals |
| 41 | 77.8 | 14 | Reducing fractions to lowest terms |
| 42 | 76.5 | 13 | Reading a rule |
| 46 | 73.3 | 11 | Using pi $\pi$ |
| 46 | 73.3 | 11 | Circumference using $C = \pi d = 2\pi r$ |
| 46 | 73.3 | 11 | Area of circle using $A = \pi r^2$ |
| 46 | 73.3 | 11 | Area of rectangle |
| 46 | 73.3 | 11 | Area of parallelogram |
| 46 | 73.3 | 11 | Area of triangle |
| 46 | 73.3 | 11 | Meaning of percentage |
| 52 | 71.4 | 10 | Division of decimals |
| 52 | 71.4 | 10 | Squaring a number |
| 52 | 71.4 | 10 | Reading, writing decimals |
| 52 | 71.4 | 10 | Subtraction of decimals |
| 52 | 71.4 | 10 | Finding per cent of a number |
| 55 | 69.2 | 9 | Liquid measure |
| 56 | 64.7 | 11 | Averages |
| 58 | 64.3 | 9 | Multiplying whole numbers and decimals by 10,100,etc. |
| 58 | 64.3 | 9 | Dividing whole numbers and decimals by 10,100,etc. |
| 58 | 64.3 | 9 | Micrometer reading |
| 60 | 62.5 | 10 | Rounding numbers |
| 61 | 60 | 12 | Division, whole numbers |
| 62 | 57.1 | 8 | Addition of decimals |
| 63 | 55 | 11 | Multiplication, whole numbers |
| 64 | 52.9 | 9 | Reading large numbers |
| 65.5 | 26.3 | 5 | Addition, whole numbers |
| 65.5 | 26.3 | 5 | Subtraction, whole numbers |

TABLE 19

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF ELECTRICAL MAINTENANCE CONSTRUCTION TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 5.5 | 100 | 39 | Addition, whole numbers |
| 5.5 | 100 | 39 | Subtraction, whole numbers |
| 5.5 | 100 | 39 | Multipliation, whole numbers |
| 5.5 | 100 | 39 | Division, whole numbers |
| 5.5 | 100 | 39 | Reading, writing decimals |
| 5.5 | 100 | 39 | Addition of decimals |
| 5.5 | 100 | 39 | Subtraction of decimals |
| 5.5 | 100 | 39 | Multiplication of decimals |
| 5.5 | 100 | 39 | Division of decimals |
| 5.5 | 100 | 39 | Reading a rule |
| 11.5 | 97.4 | 37 | Rounding off decimals |
| 11.5 | 97.4 | 38 | Dividing whole numbers and decimals by 10, 100, etc. |
| 15.5 | 94.9 | 37 | Finding per cent of a number |
| 15.5 | 94.9 | 37 | Addition, fractions |
| 15.5 | 94.9 | 37 | Subtraction, fractions |
| 15.5 | 94.9 | 37 | Decimal equivalents |
| 15.5 | 94.9 | 37 | Changing common fractions to decimals |
| 15.5 | 94.9 | 37 | Multiplying whole numbers and decimals by 10, 100, etc. |
| 21 | 92.3 | 36 | Rounding numbers |
| 21 | 92.3 | 36 | Addition, mixed numbers |
| 21 | 92.3 | 36 | Subtraction, mixed numbers |
| 21 | 92.3 | 36 | Multiplication, fractions |
| 21 | 92.3 | 36 | Meaning of percentage |
| 26 | 89.7 | 35 | Changing per cent to decimals |
| 26 | 89.7 | 35 | Multiplication, mixed numbers |
| 26 | 89.7 | 35 | Area of square |
| 26 | 89.7 | 35 | Division, fractions |
| 26 | 89.7 | 35 | Squaring a number |
| 29 | 89.5 | 34 | Division, mixed numbers |
| 31 | 87.2 | 34 | Reading large numbers |
| 31 | 87.2 | 34 | Reducing fractions to lowest |
| 31 | 87.2 | 34 | Changing decimals to common fractions |
| 33 | 86.8 | 33 | Simple algebraic equation with one unknown |
| 36 | 84.6 | 33 | Ratio and proportion |
| 36 | 84.6 | 33 | Finding what per cent one number is of another |
| 36 | 84.6 | 33 | Changing decimals to per cents |
| 36 | 84.6 | 33 | Using pi $\pi$ |
| 36 | 84.6 | 33 | Square root |
| 40.5 | 82.1 | 32 | Finding a number when a per cent of it is known |
| 40.5 | 82.1 | 32 | Averages |
| 40.5 | 82.1 | 32 | Improper fractions, mixed numbers |
| 40.5 | 82.1 | 32 | Reducing mixed numbers to simplest form |
| 43 | 79.5 | 31 | Measuring angles |
| 45 | 76.9 | 30 | Comparing fractions |
| 45 | 76.9 | 30 | Changing common fractions to per cents |
| 45 | 76.9 | 30 | Finding what part one number is of another |
| 47.5 | 74.4 | 29 | Finding a number when a fractional part of it is known |
| 47.5 | 74.4 | 29 | Area of rectangle |
| 50 | 71.8 | 28 | Micrometer reading |
| 50 | 71.8 | 28 | Finding length of unknown side of right triangle |
| 50 | 71.8 | 28 | Area of circle |
| 53 | 69.2 | 27 | Area of circle using $A = \pi r^2$ |
| 53 | 69.2 | 27 | Circumference using $C = \pi d = 2\pi r$ |
| 53 | 69.2 | 27 | Changing per cents to common fractions |
| 55 | 63.2 | 24 | Temperature conversion |
| 56 | 53.8 | 21 | Acute and obtuse angles |
| 57 | 46.2 | 18 | Area of triangle |
| 58 | 38.5 | 15 | Area of parallelogram |
| 59 | 30.8 | 12 | Liquid measure |
| 60 | 28.2 | 11 | Volume of rectangular solid |
| 61 | 23.1 | 9 | Volume of cube |
| 62 | 20.5 | 8 | Area of trapezoid |
| 63 | 17.9 | 7 | Volume of cylinder |
| 65 | 10.3 | 4 | Volume of sphere |
| 65 | 10.3 | 4 | Volume of cone |
| 65 | 10.3 | 4 | Volume of pyramid |

TABLE 20

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING ELECTRICAL MAINTENANCE CONSTRUCTION STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 84.2 | 32 | Ratio and proportion |
| 2 | 79.5 | 31 | Square root |
| 3 | 78.4 | 29 | Finding length of unknown side of right triangle |
| 4 | 77.8 | 28 | Temperature conversion |
| 5 | 76.3 | 29 | Finding a number when a per cent of it is known |
| 6 | 75 | 27 | Acute and obtuse angles |
| 7.5 | 74.4 | 29 | Decimal equivalents |
| 7.5 | 74.4 | 29 | Multiplication, mixed numbers |
| 9.5 | 73.7 | 28 | Finding what part one number is of another |
| 9.5 | 73.7 | 28 | Finding a number when a fractional part of it is known |
| 11 | 73.6 | 28 | Division, mixed numbers |
| 12.5 | 71.8 | 28 | Reducing mixed numbers to simplest form |
| 12.5 | 71.8 | 28 | Division of decimals |
| 14 | 71.7 | 27 | Measuring angles |
| 15.5 | 71.1 | 27 | Division, fractions |
| 15.5 | 71.1 | 27 | Finding what per cent one number is of another |
| 17 | 70.3 | 26 | Simple algebraic equation with one unknown |
| 19.5 | 69.2 | 27 | Changing common fractions to decimals |
| 19.5 | 69.2 | 27 | Multiplication, fractions |
| 19.5 | 69.2 | 27 | Reducing fractions to lowest terms |
| 19.5 | 69.2 | 27 | Multiplication of decimals |
| 22 | 68.4 | 26 | Comparing fractions |
| 23 | 67.6 | 25 | Micrometer reading |
| 24.5 | 65.8 | 25 | Changing common fractions to per cents |
| 24.5 | 65.8 | 25 | Finding per cent of a number |
| 26.5 | 65.7 | 23 | Circumference using $C=\pi d=2\pi r$ |
| 26.5 | 65.7 | 23 | Area of circle using $A=\pi r2$ |
| 28 | 64.9 | 24 | Changing decimals to common fractions |
| 30 | 64.1 | 25 | Subtraction, fractions |
| 30 | 64.1 | 25 | Addition, mixed numbers |
| 30 | 64.1 | 25 | Subtraction, mixed numbers |
| 32 | 63.2 | 24 | Changing decimals to per cents |
| 33 | 62.2 | 23 | Changing per cents to common fractions |
| 34.5 | 61.5 | 24 | Improper fractions, mixed numbers |
| 34.5 | 61.5 | 24 | Addition, fractions |
| 36.5 | 60.5 | 23 | Meaning of percentage |
| 36.5 | 60.5 | 23 | Changing per cent to decimals |
| 39 | 59.4 | 19 | Volume of sphere |
| 39 | 59.4 | 19 | Volume of cone |
| 39 | 59.4 | 19 | Area of trapezoid |
| 41 | 58.1 | 18 | Volume of pyramid |
| 42 | 57.9 | 22 | Dividing whole numbers and decimals by 10,100,etc. |
| 43 | 56.8 | 21 | Using pi $\pi$ |
| 44 | 56.4 | 22 | Subtraction of decimals |
| 45 | 56.3 | 18 | Volume of rectangular solid |
| 46 | 53.8 | 21 | Reading, writing decimals |
| 47.5 | 53.1 | 17 | Volume of cube |
| 47.5 | 53.1 | 17 | Volume of cylinder |
| 49 | 51.7 | 20 | Area of circle |
| 50 | 51.4 | 18 | Area of parallelogram |
| 51.5 | 48.7 | 19 | Squaring a number |
| 51.5 | 48.7 | 19 | Addition of decimals |
| 54 | 47.4 | 18 | Averages |
| 54 | 47.4 | 18 | Area of rectangle |
| 54 | 47.4 | 18 | Area of square |
| 56 | 47.2 | 17 | Area of triangle |
| 57 | 46.2 | 18 | Multiplying whole numbers and decimals by 10,100,etc. |
| 58 | 43.6 | 17 | Rounding off decimals |
| 59 | 41 | 16 | Reading a rule |
| 60 | 38.5 | 15 | Division, whole numbers |
| 61 | 38.2 | 13 | Liquid measure |
| 62 | 35.9 | 14 | Reading large numbers |
| 63 | 28.2 | 11 | Multiplication, whole numbers |
| 64 | 25.6 | 10 | Rounding numbers |
| 65 | 17.8 | 7 | Subtraction, whole numbers |
| 66 | 12.8 | 5 | Addition, whole numbers |

TABLE 21

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF ELECTRONICS TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 4 | 100 | 48 | Multiplication of decimals |
| 4 | 100 | 48 | Division of decimals |
| 4 | 100 | 48 | Addition, whole numbers |
| 4 | 100 | 47 | Subtraction, whole numbers |
| 4 | 100 | 48 | Multiplication, whole numbers |
| 4 | 100 | 48 | Division, whole numbers |
| 4 | 100 | 49 | Reading, writing decimals |
| 8 | 98 | 48 | Squaring a number |
| 10.5 | 97.9 | 47 | Rounding off decimals |
| 10.5 | 97.9 | 47 | Ratio and proportion |
| 10.5 | 97.9 | 47 | Multiplying whole numbers and decimals by 10,100, etc. |
| 10.5 | 97.9 | 47 | Dividing whole numbers and decimals by 10,100, etc. |
| 14 | 95.9 | 47 | Square root |
| 14 | 95.9 | 47 | Simple algebraic equation with one unknown |
| 14 | 95.9 | 47 | Addition of decimals |
| 16.5 | 95.8 | 46 | Subtraction of decimals |
| 16.5 | 95.8 | 46 | Using pi $\pi$ |
| 18.5 | 95.7 | 45 | Rounding numbers |
| 18.5 | 95.7 | 45 | Meaning of percentage |
| 20 | 93.9 | 46 | Changing common fractions to decimals |
| 21 | 93.8 | 45 | Reading large numbers |
| 22.5 | 93.6 | 44 | Finding per cent of a number |
| 22.5 | 93.6 | 44 | Averages |
| 24 | 93.3 | 42 | Decimal equivalents |
| 25.5 | 91.7 | 44 | Changing per cent to decimals |
| 25.5 | 91.7 | 44 | Changing decimals to per cents |
| 27.5 | 89.4 | 42 | Changing decimals to common fractions |
| 27.5 | 89.4 | 42 | Addition, fractions |
| 29 | 87.5 | 42 | Finding what part one number is of another |
| 31 | 87.2 | 41 | Reducing fractions to lowest terms |
| 31 | 87.2 | 41 | Multiplication, fractions |
| 31 | 87.2 | 41 | Finding what per cent one number is of another |
| 33.5 | 85.1 | 40 | Division, fractions |
| 33.5 | 85.1 | 40 | Subtraction, fractions |
| 35 | 84.8 | 39 | Comparing fractions |
| 36.5 | 83.3 | 40 | Addition, mixed numbers |
| 36.5 | 83.3 | 40 | Subtraction, mixed numbers |
| 38.5 | 83 | 39 | Reducing mixed numbers to simplest form |
| 38.5 | 83 | 39 | Finding a number when a per cent of it is known |
| 40 | 81.6 | 40 | Reading a rule |
| 41 | 81.3 | 39 | Finding length of unknown side of right triangle |
| 42 | 80.9 | 38 | Improper fractions, mixed numbers |
| 43 | 80.4 | 36 | Finding a number when a fractional part of it is known |
| 44.5 | 79.2 | 38 | Multiplication, mixed numbers |
| 44.5 | 79.2 | 38 | Division, mixed numbers |
| 46 | 78.7 | 37 | Changing common fractions to per cents |
| 47 | 76.6 | 36 | Measuring angles |
| 48 | 76.1 | 35 | Changing per cents to common fractions |
| 49 | 64.6 | 31 | Acute and obtuse angles |
| 50 | 60 | 31 | Temperature conversion |
| 51 | 57.4 | 27 | Area of circle using $A = \pi r^2$ |
| 52 | 53.2 | 25 | Circumference using $C = \pi d = 2\pi r$ |
| 53 | 51.1 | 24 | Area of rectangle |
| 54 | 48.9 | 23 | Area of circle |
| 55 | 46.8 | 22 | Area of square |
| 56 | 43.5 | 20 | Micrometer reading |
| 57 | 35.6 | 16 | Area of parallelogram |
| 58 | 34.8 | 16 | Area of triangle |
| 59.5 | 25 | 11 | Volume of rectangular solid |
| 59.5 | 25 | 11 | Volume of cube |
| 61.5 | 20.5 | 9 | Volume of cylinder |
| 61.5 | 20.5 | 9 | Volume of sphere |
| 63 | 17.8 | 8 | Area of trapezoid |
| 64 | 18.2 | 8 | Volume of cone |
| 65 | 15.9 | 7 | Volume of pyramid |
| 66 | 11.4 | 5 | Liquid measure |

TABLE 22

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING ELECTRONICS STUDENT

| RANK | PERCENT | *NUMBER | SKILL |
|---|---|---|---|
| 1 | 83 | 39 | Square root |
| 2 | 81.3 | 39 | Ratio and proportion |
| 3 | 78.3 | 36 | Finding length of unknown side of right triangle |
| 4.5 | 73.9 | 34 | Finding what per cent one number is of another |
| 4.5 | 73.9 | 34 | Finding what part one number is of another |
| 6 | 72.7 | 32 | Temperature conversion |
| 7 | 71.1 | 32 | Finding a number when a per cent of it is known |
| 8 | 68.3 | 28 | Decimal equivalents |
| 9 | 68.1 | 32 | Division of decimals |
| 10 | 67.4 | 29 | Finding a number when a fractional part of it is known |
| 11 | 66.7 | 32 | Simple algebraic equation with one unknown |
| 12 | 65.2 | 30 | Division, fractions |
| 13 | 64.6 | 31 | Changing common fractions to decimals |
| 14.5 | 64.3 | 27 | Circumference using $C = \pi d = 2\pi r$ |
| 14.5 | 64.3 | 27 | Micrometer reading |
| 16 | 63.8 | 30 | Addition, fractions |
| 17 | 63.6 | 28 | Comparing fractions |
| 18 | 63.4 | 26 | Area of circle using $A = \pi r^2$ |
| 19 | 63 | 29 | Subtraction, fractions |
| 20 | 62.8 | 27 | Acute and obtuse angles |
| 21.5 | 61.7 | 29 | Using pi $\pi$ |
| 21.5 | 61.7 | 29 | Reducing fractions to lowest terms |
| 24 | 60.9 | 28 | Measuring angles |
| 24 | 60.9 | 28 | Multiplying whole numbers and decimals by 10,100,etc. |
| 24 | 60.9 | 28 | Dividing whole numbers and decimals by 10,100,etc. |
| 26 | 60.5 | 26 | Changing decimals to common fractions |
| 28 | 60 | 27 | Improper fractions, mixed numbers |
| 28 | 60 | 27 | Finding per cent of a number |
| 28 | 60 | 27 | Division, mixed numbers |
| 30.5 | 59.6 | 28 | Averages |
| 30.5 | 59.6 | 28 | Multiplication of decimals |
| 32 | 59.1 | 26 | Changing common fractions to per cents |
| 33 | 58.7 | 27 | Meaning of percentage |
| 34 | 58.5 | 24 | Area of circle |
| 35 | 58.1 | 25 | Changing per cents to common fractions |
| 36 | 57.9 | 22 | Area of triangle |
| 37 | 56.8 | 21 | Area of trapezoid |
| 38 | 56.5 | 26 | Multiplication, fractions |
| 40 | 55.6 | 20 | Volume of sphere |
| 40 | 55.6 | 20 | Volume of cone |
| 40 | 55.6 | 20 | Volume of pyramid |
| 42 | 54.5 | 24 | Multiplication, mixed numbers |
| 43.5 | 54.3 | 25 | Changing per cent to decimals |
| 43.5 | 54.3 | 25 | Changing decimals to per cents |
| 45 | 54.2 | 26 | Reading, writing decimals |
| 46 | 54.1 | 20 | Area of parallelogram |
| 47.5 | 52.8 | 19 | Volume of cube |
| 47.5 | 52.8 | 19 | Volume of cylinder |
| 49 | 52.3 | 23 | Reducing mixed numbers to simplest form |
| 50 | 51.1 | 23 | Reading a rule |
| 51.5 | 50 | 20 | Area of rectangle |
| 51.5 | 50 | 18 | Volume of rectangular solid |
| 53.5 | 48.9 | 23 | Squaring a number |
| 53.5 | 48.9 | 23 | Rounding off decimals |
| 55 | 45.7 | 21 | Subtraction, mixed numbers |
| 56 | 44.7 | 21 | Addition, mixed numbers |
| 57 | 41.3 | 19 | Subtraction of decimals |
| 58 | 41.2 | 14 | Liquid measure |
| 59 | 41 | 16 | Area of square |
| 60 | 40.4 | 19 | Addition of decimals |
| 61 | 38.3 | 18 | Reading large numbers |
| 62 | 36.2 | 17 | Rounding numbers |
| 63 | 30.4 | 14 | Division, whole numbers |
| 64 | 21.7 | 10 | Multiplication, whole numbers |
| 65 | 13.3 | 6 | Subtraction, whole numbers |
| 66 | 13 | 16 | Addition, whole numbers |

TABLE 23

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF INDUSTRIAL ELECTRICAL TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 11 | 100 | 20 | Meaning of percentage |
| 11 | 100 | 20 | Rounding off decimals |
| 11 | 100 | 20 | Addition, whole numbers |
| 11 | 100 | 20 | Changing per cent to decimals |
| 11 | 100 | 19 | Reading, writing decimals |
| 11 | 100 | 19 | Changing decimals to per cents |
| 11 | 100 | 20 | Addition of decimals |
| 11 | 100 | 20 | Squaring a number |
| 11 | 100 | 20 | Subtraction, whole numbers |
| 11 | 100 | 20 | Multiplication, whole numbers |
| 11 | 100 | 20 | Division, whole numbers |
| 15 | 95 | 19 | Multiplying whole numbers and decimals by 10,100, etc. |
| 15 | 95 | 19 | Subtraction of decimals |
| 15 | 95 | 19 | Division of decimals |
| 15 | 95 | 19 | Multiplication of decimals |
| 15 | 95 | 19 | Reading a rule |
| 15 | 95 | 19 | Square root |
| 15 | 95 | 19 | Dividing whole numbers and decimals by 10,100,etc. |
| 20 | 94.7 | 18 | Changing common fractions to decimals |
| 20 | 94.7 | 18 | Rounding numbers |
| 20 | 94.7 | 18 | Reading large numbers |
| 22 | 90 | 18 | Averages |
| 24.5 | 89.5 | 17 | Using pi $\pi$ |
| 24.5 | 89.5 | 17 | Simple algebraic equation with one unknown |
| 24.5 | 89.5 | 17 | Multiplication, fractions |
| 24.5 | 89.5 | 17 | Division, fractions |
| 27 | 85 | 17 | Ratio and proportion |
| 32 | 84.2 | 16 | Addition, fractions |
| 32 | 84.2 | 16 | Subtraction, mixed numbers |
| 32 | 84.2 | 16 | Decimal equivalents |
| 32 | 84.2 | 16 | Addition, mixed numbers |
| 32 | 84.2 | 16 | Division, mixed numbers |
| 32 | 84.2 | 16 | Multiplication, mixed numbers |
| 32 | 84.2 | 16 | Improper fractions, mixed numbers |
| 32 | 84.2 | 16 | Reducing fractions to lowest terms |
| 32 | 84.2 | 16 | Subtraction, fractions |
| 40 | 78.9 | 15 | Measuring angles |
| 40 | 78.9 | 15 | Changing per cents to common fractions |
| 40 | 78.9 | 15 | Temperature conversion |
| 40 | 78.9 | 15 | Changing decimals to common fractions |
| 40 | 78.9 | 15 | Changing common fractions to per cents |
| 40 | 78.9 | 15 | Finding what per cent one number is of another |
| 40 | 78.9 | 15 | Reducing mixed numbers to simplest form |
| 45.5 | 73.7 | 14 | Area of rectangle |
| 45.5 | 73.7 | 14 | Comparing fractions |
| 45.5 | 73.7 | 14 | Finding length of unknown side of right triangle |
| 45.5 | 73.7 | 14 | Area of circle using $A = \pi r^2$ |
| 48 | 72.2 | 13 | Area of square |
| 49.5 | 68.4 | 13 | Area of circle |
| 49.5 | 68.4 | 13 | Circumference using $C = \pi d = 2\pi r$ |
| 52 | 66.7 | 12 | Finding what part one number is of another |
| 52 | 66.7 | 12 | Finding a number when a per cent of it is known |
| 52 | 66.7 | 12 | Finding a number when a fractional part of it is known |
| 54 | 61.1 | 11 | Acute and obtuse angles |
| 55 | 57.9 | 11 | Micrometer reading |
| 56 | 50 | 9 | Area of triangle |
| 58 | 38.9 | 7 | Volume of rectangular solid |
| 58 | 38.9 | 7 | Volume of cube |
| 58 | 38.9 | 7 | Area of parallelogram |
| 60 | 26.3 | 5 | Liquid measure |
| 61.5 | 22.2 | 4 | Volume of cylinder |
| 61.5 | 22.2 | 4 | Area of trapezoid |
| 64 | 16.7 | 3 | Volume of pyramid |
| 64 | 16.7 | 3 | Volume of cone |
| 64 | 16.7 | 3 | Volume of sphere |
| 66 | 9.5 | 19 | Finding per cent of a number |

TABLE 24

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING INDUSTRIAL ELECTRICAL STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 94.7 | 18 | Finding what per cent one number is of another |
| 4 | 94.4 | 17 | Finding a number when a per cent of it is known |
| 4 | 94.4 | 17 | Finding what part one number is of another |
| 4 | 94.4 | 16 | Finding a number when a fractional part of it is known |
| 4 | 94.4 | 17 | Measuring angles |
| 4 | 94.4 | 17 | Finding length of unknown side of right triangle |
| 7 | 94.1 | 16 | Acute and obtuse angles |
| 8 | 90 | 18 | Square root |
| 9 | 88.9 | 16 | Changing common fractions to decimals |
| 10 | 88.2 | 15 | Area of trapezoid |
| 12 | 87.5 | 14 | Volume of sphere |
| 12 | 87.5 | 14 | Volume of cone |
| 12 | 87.5 | 14 | Volume of pyramid |
| 14 | 85 | 17 | Simple algebraic equation with one unknown |
| 16.5 | 84.2 | 14 | Volume of cylinder |
| 16.5 | 84.2 | 14 | Area of triangle |
| 17.5 | 82.4 | 16 | Micrometer reading |
| 17.5 | 82.4 | 16 | Temperature conversion |
| 19 | 80 | 16 | Ratio and proportion |
| 20.5 | 78.9 | 15 | Decimal equivalents |
| 20.5 | 78.9 | 15 | Division, fractions |
| 23 | 77.8 | 14 | Division, mixed numbers |
| 23 | 77.8 | 14 | Area of parallelogram |
| 23 | 77.8 | 14 | Changing decimals to common fractions |
| 25 | 75 | 15 | Finding per cent of a number |
| 27.5 | 73.7 | 14 | Multiplication of decimals |
| 27.5 | 73.7 | 14 | Division of decimals |
| 27.5 | 73.7 | 14 | Changing decimals to per cents |
| 27.5 | 73.7 | 14 | Area of circle using $A = \pi r^2$ |
| 31 | 72.2 | 13 | Using pi $\pi$ |
| 31 | 72.2 | 13 | Changing per cents to common fractions |
| 31 | 72.2 | 13 | Changing common fractions to per cents |
| 33 | 70.6 | 12 | Volume of rectangular solid |
| 34.5 | 70 | 14 | Meaning of percentage |
| 34.5 | 70 | 14 | Changing per cent to decimals |
| 37 | 68.4 | 13 | Circumference using $C = \pi d = 2\pi r$ |
| 37 | 68.4 | 13 | Multiplying whole numbers and decimals by 10,100,etc. |
| 37 | 68.4 | 13 | Multiplication, fractions |
| 40 | 66.7 | 12 | Area of circle |
| 40 | 66.7 | 12 | Rounding off decimals |
| 40 | 66.7 | 12 | Multiplication, mixed numbers |
| 42.5 | 63.2 | 12 | Reading, writing decimals |
| 42.5 | 63.2 | 12 | Reading a rule |
| 45.5 | 61.1 | 11 | Improper fractions, mixed numbers |
| 45.5 | 61.1 | 11 | Volume of cube |
| 45.5 | 61.1 | 11 | Addition, fractions |
| 45.5 | 61.1 | 11 | Subtraction, fractions |
| 48 | 58.8 | 10 | Comparing fractions |
| 49 | 57.9 | 11 | Reducing fractions to lowest terms |
| 50 | 55.6 | 10 | Reducing mixed numbers to simplest form |
| 51 | 52.9 | 9 | Liquid measure |
| 52.5 | 52.6 | 10 | Area of rectangle |
| 52.5 | 52.6 | 10 | Area of square |
| 54.5 | 50 | 9 | Addition, mixed numbers |
| 54.5 | 50 | 9 | Subtraction, mixed numbers |
| 57 | 47.4 | 9 | Rounding numbers |
| 57 | 47.4 | 9 | Dividing whole numbers and decimals by 10, 100, etc. |
| 57 | 47.4 | 9 | Squaring a number |
| 59 | 45 | 9 | Averages |
| 60.5 | 42.1 | 8 | Addition of decimals |
| 60.5 | 42.1 | 8 | Subtraction of decimals |
| 62 | 35 | 7 | Division, whole numbers |
| 63 | 31.6 | 6 | Reading large numbers |
| 65 | 20 | 4 | Addition, whole numbers |
| 65 | 20 | 4 | Subtraction, whole numbers |
| 65 | 20 | 4 | Multiplication, whole numbers |

TABLE 25

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF INTERIOR DECORATING/COMMERCIAL ART TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 100 | 26 | Reading a rule |
| 2.5 | 88.5 | 23 | Measuring angles |
| 2.5 | 88.5 | 23 | Addition, whole numbers |
| 4 | 88 | 22 | Subtraction, whole numbers |
| 5 | 84.6 | 22 | Multiplication, whole numbers |
| 6 | 84 | 21 | Division, whole numbers |
| 7.5 | 80 | 20 | Addition, mixed numbers |
| 7.5 | 80 | 20 | Subtraction, mixed numbers |
| 9 | 76.9 | 20 | Division, mixed numbers |
| 10 | 72 | 18 | Multiplication, mixed numbers |
| 11.5 | 69.2 | 18 | Reducing mixed numbers to simplest form |
| 11.5 | 69.2 | 18 | Ratio and proportion |
| 13.5 | 68 | 17 | Addition, fractions |
| 13.5 | 68 | 17 | Subtraction, fractions |
| 15.5 | 61.5 | 16 | Reading large numbers |
| 15.5 | 61.5 | 16 | Meaning of percentage |
| 17.5 | 60 | 15 | Finding per cent of a number |
| 17.5 | 60 | 15 | Multiplication, fractions |
| 19 | 57.1 | 15 | Averages |
| 21.5 | 56 | 14 | Area of square |
| 21.5 | 56 | 14 | Division, fractions |
| 21.5 | 56 | 14 | Reducing fractions to lowest terms |
| 21.5 | 56 | 14 | Improper fractions, mixed numbers |
| 24 | 53.8 | 14 | Rounding numbers |
| 25.5 | 52 | 13 | Changing common fractions to decimals |
| 25.5 | 52 | 13 | Reading, writing decimals |
| 30.5 | 48 | 12 | Addition of decimals |
| 30.5 | 48 | 12 | Subtraction of decimals |
| 30.5 | 48 | 12 | Multiplication of decimals |
| 30.5 | 48 | 12 | Division of decimals |
| 30.5 | 48 | 12 | Finding what part one number is of another |
| 30.5 | 48 | 12 | Changing decimals to per cents |
| 30.5 | 48 | 12 | Rounding off decimals |
| 30.5 | 48 | 12 | Area of rectangle |
| 35 | 45.8 | 11 | Comparing fractions |
| 37 | 44 | 11 | Finding what per cent one number is of another |
| 37 | 44 | 11 | Acute and obtuse angles |
| 37 | 44 | 11 | Area of circle |
| 39.5 | 42.3 | 11 | Changing decimals to common fractions |
| 39.5 | 42.3 | 11 | Changing per cents to common fractions |
| 42 | 40 | 10 | Circumference using $C = \pi d = 2\pi r$ |
| 42 | 40 | 10 | Multiplying whole numbers and decimals by 10, 100, etc. |
| 42 | 40 | 10 | Changing per cent to decimals |
| 45.5 | 36 | 9 | Area of circle using $A = \pi r^2$ |
| 45.5 | 36 | 9 | Decimal equivalents |
| 45.5 | 36 | 9 | Dividing whole numbers and decimals by 10, 100, etc. |
| 45.5 | 36 | 9 | Area of triangle |
| 48 | 33.3 | 8 | Finding a number when a per cent of it is known |
| 49.5 | 32 | 8 | Changing common fractions to per cents |
| 49.5 | 32 | 8 | Using pi $\pi$ |
| 51 | 28 | 7 | Liquid measure |
| 54.5 | 24 | 6 | Volume of rectangular solid |
| 54.5 | 24 | 6 | Volume of cube |
| 54.5 | 24 | 6 | Simple algebraic equation with one unknown |
| 54.5 | 24 | 6 | Finding a number when a fractional part of it is known |
| 54.5 | 24 | 6 | Finding length of unknown side of right triangle |
| 54.5 | 24 | 6 | Area of parallelogram |
| 59.5 | 20 | 5 | Squaring a number |
| 59.5 | 20 | 5 | Square root |
| 59.5 | 20 | 5 | Volume of sphere |
| 59.5 | 20 | 5 | Volume of pyramid |
| 63 | 16 | 4 | Volume of cone |
| 63 | 16 | 4 | Area of trapezoid |
| 63 | 16 | 4 | Volume of cylinder |
| 65 | 8.3 | 2 | Micrometer reading |
| 66 | 4 | 1 | Temperature conversion |

TABLE 26

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING INTERIOR DECORATING/COMMERCIAL ART STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 80 | 20 | Area of triangle |
| 2.5 | 79.2 | 19 | Volume of cube |
| 2.5 | 79.2 | 19 | Area of parallelogram |
| 5.5 | 78.3 | 18 | Volume of cylinder |
| 5.5 | 78.3 | 18 | Volume of sphere |
| 5.5 | 78.3 | 18 | Volume of cone |
| 5.5 | 78.3 | 18 | Volume of pyramid |
| 9 | 76 | 19 | Using pi $\pi$ |
| 9 | 76 | 19 | Circumference using $C=\pi d=2\pi r$ |
| 9 | 76 | 19 | Area of circle |
| 11.5 | 75 | 18 | Volume of rectangular solid |
| 11.5 | 75 | 18 | Area of trapezoid |
| 13 | 73.9 | 17 | Finding length of unkown side of right triangle |
| 14 | 73.1 | 19 | Measuring angles |
| 15 | 72 | 18 | Area of circle using $A=\pi r2$ |
| 16 | 70.8 | 17 | Reading, writing decimals |
| 17 | 68 | 17 | Ratio and proportion |
| 19.5 | 66.7 | 16 | Improper fractions, mixed numbers |
| 19.5 | 66.7 | 16 | Finding a number when a fractional part of it is known |
| 19.5 | 66.7 | 16 | Acute and obtuse angles |
| 19.5 | 66.7 | 16 | Simple algebraic equation with one unknown |
| 22 | 65.4 | 17 | Changing decimals to common fractions |
| 23 | 65.2 | 15 | Square root |
| 24 | 64 | 16 | Decimal equivalents |
| 26.5 | 62.5 | 15 | Dividing whole numbers and decimals by 10,100,etc. |
| 26.5 | 62.5 | 15 | Subtraction, fractions |
| 26.5 | 62.5 | 15 | Reducing fractions to lowest terms |
| 26.5 | 62.5 | 15 | Rounding off decimals |
| 29 | 62 | 17 | Changing common fractions to decimals |
| 30 | 60 | 15 | Finding what per cent one number is of another |
| 31 | 59.1 | 13 | Micrometer reading |
| 34 | 58.3 | 14 | Addition, fractions |
| 34 | 58.3 | 14 | Multiplication, fractions |
| 34 | 58.3 | 14 | Finding a number when a per cent of it is known |
| 34 | 58.3 | 14 | Finding what part one number is of another |
| 34 | 58.3 | 14 | Multiplying whole numbers and decimals by 10,100,etc. |
| 37 | 56.5 | 13 | Squaring a number |
| 38.5 | 56 | 14 | Finding per cent of a number |
| 38.5 | 56 | 14 | Reducing mixed numbers to simplest form |
| 40 | 54.5 | 12 | Temperature conversion |
| 41.5 | 54.2 | 13 | Division, fractions |
| 41.5 | 54.2 | 13 | Comparing fractions |
| 44 | 53.8 | 14 | Changing per cents to common fractions |
| 44 | 53.8 | 14 | Meaning of percentage |
| 44 | 53.8 | 14 | Reading a rule |
| 48.5 | 52 | 13 | Multiplication of decimals |
| 48.5 | 52 | 13 | Division of decimals |
| 48.5 | 52 | 13 | Area of rectangle |
| 48.5 | 52 | 13 | Changing per cent to decimals |
| 48.5 | 52 | 13 | Changing common fractions to per cents |
| 52.5 | 50 | 12 | Addition of decimals |
| 52.5 | 50 | 12 | Subtraction, mixed numbers |
| 54.5 | 48 | 12 | Subtraction of decimals |
| 54.5 | 48 | 12 | Area of square |
| 56.5 | 45.8 | 11 | Multiplication, mixed numbers |
| 56.5 | 45.8 | 11 | Addition, mixed numbers |
| 58 | 44 | 11 | Division, mixed numbers |
| 59 | 43.5 | 10 | Liquid measure |
| 60 | 41.7 | 10 | Rounding numbers |
| 61 | 40 | 10 | Reading large numbers |
| 62 | 37.5 | 9 | Averages |
| 63 | 29.2 | 7 | Division, whole numbers |
| 64 | 28 | 7 | Multiplication, whole numbers |
| 65 | 26.9 | 7 | Addition, whole numbers |
| 66 | 24 | 6 | Subtraction, whole numbers |

TABLE 27

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF MACHINE TOOL DIE TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 6.5 | 100 | 99 | Addition of decimals |
| 6.5 | 100 | 99 | Division of decimals |
| 6.5 | 100 | 99 | Decimal equivalents |
| 6.5 | 100 | 99 | Reading a rule |
| 6.5 | 100 | 99 | Micrometer reading |
| 6.5 | 100 | 99 | Subtraction of decimals |
| 6.5 | 100 | 100 | Addition, fractions |
| 6.5 | 100 | 99 | Changing common fractions to decimals |
| 6.5 | 100 | 99 | Division, whole numbers |
| 6.5 | 100 | 100 | Subtraction, fractions |
| 6.5 | 100 | 100 | Reading, writing decimals |
| 6.5 | 100 | 99 | Reducing fractions to lowest terms |
| 16 | 99 | 98 | Addition, whole numbers |
| 16 | 99 | 98 | Subtraction, mixed numbers |
| 16 | 99 | 98 | Multiplication of decimals |
| 16 | 99 | 98 | Subtraction, whole numbers |
| 16 | 99 | 98 | Addition, mixed numbers |
| 16 | 99 | 99 | Measuring angles |
| 16 | 99 | 98 | Changing decimals to common fractions |
| 21.5 | 98 | 98 | Division, fractions |
| 21.5 | 98 | 97 | Rounding off decimals |
| 21.5 | 98 | 97 | Division, mixed numbers |
| 21.5 | 98 | 97 | Multiplication, whole numbers |
| 24.5 | 97 | 96 | Multiplication, fractions |
| 24.5 | 97 | 96 | Multiplication, mixed numbers |
| 26.5 | 96 | 95 | Reducing mixed numbers to simplest form |
| 26.5 | 96 | 95 | Improper fractions, mixed numbers |
| 28 | 93 | 93 | Acute and obtuse angles |
| 29.5 | 91.9 | 91 | Rounding numbers |
| 29.5 | 91.9 | 91 | Using pi $\pi$ |
| 31.5 | 91.8 | 89 | Finding length of unknown side of right triangle |
| 31.5 | 91.8 | 90 | Circumference using $C = \pi d = 2\pi r$ |
| 33 | 88.8 | 87 | Dividing whole numbers and decimals by 10, 100, etc. |
| 34.5 | 83.8 | 83 | Simple algebraic equation with one unknown |
| 34.5 | 83.8 | 83 | Ratio and proportion |
| 36 | 85.9 | 85 | Multiplying whole numbers and decimals by 10, 100,etc. |
| 37 | 84.5 | 82 | Square root |
| 38 | 82.8 | 82 | Comparing fractions |
| 39 | 81.4 | 79 | Squaring a number |
| 40 | 78.6 | 77 | Reading large numbers |
| 41 | 76.1 | 75 | Area of circle using $A = \pi r^2$ |
| 42 | 74.2 | 72 | Area of circle |
| 43.5 | 73.2 | 71 | Area of square |
| 43.5 | 73.2 | 71 | Area of rectangle |
| 45 | 72.4 | 71 | Averages |
| 46 | 70.1 | 68 | Meaning of percentage |
| 47 | 68.8 | 66 | Finding what part one number is of another |
| 48 | 67.7 | 65 | Area of triangle |
| 49 | 67 | 65 | Finding a number when a fractional part of it is known |
| 50 | 65.6 | 63 | Area of parallelogram |
| 51.5 | 60.8 | 59 | Finding per cent of a number |
| 51.5 | 60.8 | 59 | Changing per cent to decimals |
| 53 | 59.4 | 57 | Area of trapezoid |
| 54 | 58.8 | 57 | Changing decimals to per cents |
| 56 | 57.7 | 56 | Finding what per cent one number is of another |
| 56 | 57.7 | 56 | Changing common fractions to per cents |
| 56 | 57.7 | 56 | Changing per cents to common fractions |
| 58 | 52.6 | 51 | Finding a number when a per cent of it is known |
| 59 | 48.5 | 47 | Volume of rectangular solid |
| 60.5 | 46.4 | 45 | Volume of cube |
| 60.5 | 46.4 | 45 | Volume of cylinder |
| 62 | 40.2 | 39 | Volume of cone |
| 63.5 | 38.1 | 37 | Volume of sphere |
| 63.5 | 38.1 | 37 | Volume of pyramid |
| 65 | 37.8 | 37 | Temperature conversion |
| 66 | 31.6 | 31 | Liquid measure |

TABLE 28

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING MACHINE TOOL DIE STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 87 | 80 | Finding length of unknown side of right triangle |
| 2 | 86.6 | 84 | Measuring angles |
| 3 | 86.5 | 83 | Acute and obtuse angles |
| 4 | 84.5 | 82 | Changing common fractions to decimals |
| 5 | 84.1 | 74 | Finding a number when a fractional part of it is known |
| 6 | 82.3 | 77 | Changing decimals to common fractions |
| 7 | 81.3 | 74 | Square root |
| 8 | 81 | 68 | Finding a number when a per cent of it is known |
| 9.5 | 80.9 | 72 | Finding what part one number is of another |
| 9.5 | 80.9 | 76 | Ratio and proportion |
| 11 | 80.5 | 70 | Simple algebraic equation with one unknown |
| 12 | 79.5 | 62 | Volume of cone |
| 13 | 79.1 | 68 | Finding what per cent one number is of another |
| 14 | 78.8 | 67 | Changing per cents to common fractions |
| 15 | 78.6 | 66 | Area of trapezoid |
| 16.5 | 78.2 | 61 | Volume of sphere |
| 16.5 | 78.2 | 61 | Volume of pyramid |
| 18 | 77.7 | 73 | Division, mixed numbers |
| 19 | 77.6 | 76 | Division, fractions |
| 20 | 76.7 | 66 | Changing common fractions to per cents |
| 21 | 76.6 | 72 | Circumference using $C = \pi d = 2\pi r$ |
| 22 | 76.7 | 66 | Area of triangle |
| 23 | 76.5 | 75 | Reading, writing decimals |
| 24 | 76.2 | 61 | Volume of cylinder |
| 26.5 | 75.6 | 65 | Changing per cent to decimals |
| 26.5 | 75.6 | 65 | Changing decimals to per cents |
| 26.5 | 75.6 | 65 | Area of parallelogram |
| 26.5 | 75.6 | 59 | Volume of rectangular solid |
| 29 | 75.5 | 71 | Decimal equivalents |
| 30 | 75.3 | 64 | Finding per cent of a number |
| 31 | 75 | 72 | Multiplication, fractions |
| 32 | 74.7 | 65 | Meaning of percentage |
| 33 | 74.2 | 66 | Area of circle |
| 34 | 73.7 | 70 | Division of decimals |
| 35.5 | 73.4 | 69 | Multiplication, mixed numbers |
| 35.5 | 73.4 | 58 | Temperature conversion |
| 37 | 73.3 | 66 | Comparing fractions |
| 38 | 71.8 | 56 | Volume of cube |
| 39 | 71.1 | 64 | Area of circle using $A = \pi r^2$ |
| 40 | 70.5 | 67 | Micrometer reading |
| 41.5 | 70.2 | 66 | Using pi $\pi$ |
| 41.5 | 70.2 | 66 | Improper fractions, mixed numbers |
| 43 | 68.5 | 61 | Area of rectangle |
| 44 | 68.4 | 65 | Reducing mixed numbers to simplest form |
| 45 | 68 | 66 | Rounding off decimals |
| 46 | 67 | 61 | Squaring a number |
| 47 | 66.3 | 65 | Subtraction, fractions |
| 48 | 66 | 64 | Reducing fractions to lowest terms |
| 49 | 65.8 | 52 | Liquid measure |
| 50 | 65.6 | 63 | Addition, mixed numbers |
| 51 | 65.3 | 62 | Subtraction, mixed numbers |
| 52 | 65.2 | 58 | Area of square |
| 53 | 64.8 | 59 | Dividing whole numbers and decimals by 10,100,etc. |
| 54 | 64.3 | 63 | Addition, fractions |
| 55 | 63.2 | 60 | Multiplication of decimals |
| 56 | 61.7 | 58 | Reading a rule |
| 57 | 56.3 | 49 | Averages |
| 58 | 54.8 | 51 | Multiplying whole numbers and decimals by 10,100,etc. |
| 59.5 | 43.2 | 41 | Addition of decimals |
| 59.5 | 43.2 | 41 | Subtraction of decimals |
| 61 | 40.2 | 39 | Division, whole numbers |
| 62 | 38.9 | 35 | Rounding numbers |
| 63 | 33 | 29 | Reading large numbers |
| 64 | 29.9 | 29 | Multiplication, whole numbers |
| 65 | 25.8 | 25 | Subtraction, whole numbers |
| 66 | 23.7 | 23 | Addition, whole numbers |

TABLE 29

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF MASONRY TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 2 | 100 | 26 | Subtraction, whole numbers |
| 2 | 100 | 26 | Multiplication, whole numbers |
| 2 | 100 | 26 | Addition, whole numbers |
| 4 | 96.2 | 25 | Division, whole numbers |
| 5 | 92.3 | 24 | Reading a rule |
| 6 | 92 | 23 | Rounding numbers |
| 7 | 88.5 | 20 | Area of square |
| 8 | 83.3 | 20 | Rounding off decimals |
| 9.5 | 80 | 20 | Addition, fractions |
| 9.5 | 80 | 20 | Subtraction, fractions |
| 11 | 79.2 | 19 | Multiplication, fractions |
| 12 | 76.9 | 20 | Reading large numbers |
| 13.5 | 79.2 | 19 | Division, fractions |
| 13.5 | 79.2 | 19 | Reducing fractions to lowest terms |
| 15.5 | 76 | 17 | Area of rectangle |
| 15.5 | 76 | 19 | Reducing mixed numbers to simplest form |
| 17 | 75 | 18 | Reading, writing decimals |
| 18 | 73.1 | 19 | Meaning of percentage |
| 20.5 | 72 | 18 | Subtraction, mixed numbers |
| 20.5 | 72 | 18 | Addition, mixed numbers |
| 20.5 | 72 | 18 | Multiplication, mixed numbers |
| 20.5 | 72 | 19 | Area of circle |
| 23 | 70.8 | 17 | Squaring a number |
| 25 | 68 | 17 | Area of triangle |
| 25 | 68 | 17 | Division, mixed numbers |
| 25 | 68 | 20 | Measuring angles |
| 27 | 65.4 | 20 | Ratio and proportion |
| 28 | 65.2 | 15 | Changing common fractions to decimals |
| 29 | 63.6 | 14 | Addition of decimals |
| 30 | 62.5 | 15 | Averages |
| 31 | 60.9 | 14 | Finding per cent of a number |
| 32 | 58.3 | 14 | Improper fractions, mixed numbers |
| 33.5 | 56.5 | 13 | Multiplication of decimals |
| 33.5 | 56.5 | 13 | Subtraction of decimals |
| 35.5 | 56 | 18 | Volume of cube |
| 35.5 | 56 | 19 | Finding length of unknown side of right triangle |
| 37 | 54.5 | 12 | Division of decimals |
| 40 | 54.2 | 13 | Comparing fractions |
| 40 | 54.2 | 13 | Finding what part one number is of another |
| 40 | 54.2 | 18 | Area of circle using $A = \pi r^2$ |
| 40 | 54.2 | 13 | Finding a number when a fractional part of it is known |
| 40 | 54.2 | 13 | Changing per cent to decimals |
| 43.5 | 52.2 | 12 | Multiplying whole numbers and decimals by 10,100,etc. |
| 43.5 | 52.2 | 12 | Changing decimals to per cents |
| 45 | 50 | 12 | Finding what per cent one number is of another |
| 46 | 47.8 | 11 | Square root |
| 48.5 | 45.8 | 11 | Finding a number when a per cent of it is known |
| 48.5 | 45.8 | 11 | Changing common fractions to per cents |
| 48.5 | 45.8 | 13 | Liquid measure |
| 48.5 | 45.8 | 16 | Circumference using $C = \pi d = 2\pi r$ |
| 51 | 45.5 | 10 | Decimal equivalents |
| 52 | 44 | 17 | Acute and obtuse angles |
| 53 | 43.5 | 10 | Dividing whole numbers and decimals by 10, 100, etc. |
| 54.5 | 41.7 | 16 | Using pi $\pi$ |
| 54.5 | 41.7 | 17 | Area of parallelogram |
| 56 | 40.9 | 9 | Changing decimals to common fractions |
| 57 | 40 | 16 | Volume of rectangular solid |
| 58 | 37.5 | 16 | Volume of cylinder |
| 59 | 33.3 | 8 | Changing per cents to common fractions |
| 60 | 31.8 | 15 | Area of trapezoid |
| 61 | 22.7 | 15 | Volume of pyramid |
| 62 | 20.8 | 16 | Volume of sphere |
| 63 | 17.4 | 14 | Volume of cone |
| 64 | 13 | 14 | Simple algebraic equation with one unknown |
| 65.5 | 0 | 0 | Micrometer reading |
| 65.5 | 0 | 12 | Temperature conversion |

TABLE 30

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING MASONRY STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 90.9 | 20 | Finding what part one number is of another |
| 2 | 85.7 | 18 | Finding what per cent one number is of another |
| 3 | 83.3 | 20 | Measuring angles |
| 4 | 82.6 | 19 | Finding length of unknown side of right triangle |
| 5.5 | 81.8 | 18 | Area of circle using $A = \pi r^2$ |
| 5.5 | 81.8 | 18 | Finding a number when a fractional part of it is known |
| 7 | 81 | 17 | Finding a number when a per cent of it is known |
| 8 | 80 | 20 | Ratio and proportion |
| 9 | 79.2 | 19 | Area of circle |
| 10 | 78.3 | 18 | Volume of cube |
| 11 | 76.9 | 20 | Area of square |
| 12 | 76.2 | 16 | Changing common fractions to decimals |
| 13 | 75 | 15 | Changing decimals to per cents |
| 14.5 | 73.9 | 17 | Area of parallelogram |
| 14.5 | 73.9 | 17 | Acute and obtuse angles |
| 17.5 | 72.7 | 16 | Volume of cylinder |
| 17.5 | 72.7 | 16 | Using pi |
| 17.5 | 72.7 | 16 | Circumference using $C = \pi d = 2\pi r$ |
| 17.5 | 72.7 | 16 | Square root |
| 21 | 71.4 | 15 | Changing common fractions to per cents |
| 21 | 71.4 | 15 | Finding per cent of a number |
| 21 | 71.4 | 15 | Area of trapezoid |
| 24 | 70.8 | 17 | Reducing mixed numbers to simplest form |
| 24 | 70.8 | 17 | Reducing fractions to lowest terms |
| 24 | 70.8 | 17 | Area of triangle |
| 26 | 69.6 | 16 | Volume of sphere |
| 27.5 | 68.2 | 15 | Volume of pyramid |
| 27.5 | 68.2 | 15 | Improper fractions, mixed numbers |
| 29 | 68 | 17 | Area of rectangle |
| 32.5 | 66.7 | 14 | Simple algebraic equation with one unknown |
| 32.5 | 66.7 | 14 | Changing per cent to decimals |
| 32.5 | 66.7 | 16 | Volume of rectangular solid |
| 32.5 | 66.7 | 16 | Subtraction, fractions |
| 32.5 | 66.7 | 16 | Multiplication, fractions |
| 32.5 | 66.7 | 16 | Division, fractions |
| 37 | 65.2 | 15 | Meaning of percentage |
| 37 | 65.2 | 15 | Reading, writing decimals |
| 37 | 65.2 | 15 | Multiplication, mixed numbers |
| 39 | 65 | 13 | Division of decimals |
| 40 | 63.6 | 14 | Volume of cone |
| 41 | 63.2 | 12 | Decimal equivalents |
| 42 | 61.9 | 13 | Changing per cents to common fractions |
| 43.5 | 60.9 | 14 | Comparing fractions |
| 43.5 | 60.9 | 14 | Division, mixed numbers |
| 45 | 59.1 | 13 | Rounding off decimals |
| 46 | 58.3 | 14 | Addition, fractions |
| 47.5 | 57.1 | 12 | Multiplication of decimals |
| 47.5 | 57.1 | 12 | Temperature conversion |
| 49 | 55.6 | 10 | Changing decimals to common fractions |
| 50.5 | 55 | 11 | Multiplying whole numbers and decimals by 10,100,etc. |
| 50.5 | 55 | 11 | Dividing whole numbers and decimals by 10,100,etc. |
| 52 | 54.2 | 13 | Liquid measure |
| 53 | 52.4 | 11 | Micrometer reading |
| 54 | 52.2 | 12 | Squaring a number |
| 55 | 50 | 11 | Subtraction, mixed numbers |
| 56 | 48 | 12 | Reading a rule |
| 57 | 47.6 | 10 | Subtraction of decimals |
| 58.5 | 46.2 | 12 | Multiplication, whole numbers |
| 58.5 | 46.2 | 12 | Division, whole numbers |
| 60 | 45.5 | 10 | Addition, mixed numbers |
| 61 | 42.9 | 9 | Averages |
| 62 | 38.1 | 8 | Addition of decimals |
| 63.5 | 32 | 8 | Reading large numbers |
| 63.5 | 32 | 8 | Rounding numbers |
| 65 | 30.8 | 8 | Subtraction, whole numbers |
| 66 | 23.1 | 6 | Addition, whole numbers |

TABLE 31

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF METAL TRADE TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 9.5 | 100 | 10 | Addition, whole numbers |
| 9.5 | 100 | 10 | Subtraction, whole numbers |
| 9.5 | 100 | 10 | Multiplication, whole numbers |
| 9.5 | 100 | 10 | Division, whole numbers |
| 9.5 | 100 | 10 | Reducing fractions to lowest terms |
| 9.5 | 100 | 10 | Addition, fractions |
| 9.5 | 100 | 10 | Subtraction, fractions |
| 9.5 | 100 | 10 | Reducing mixed numbers to simplest form |
| 9.5 | 100 | 10 | Reading, writing decimals |
| 9.5 | 100 | 10 | Changing common fractions to decimals |
| 9.5 | 100 | 10 | Reading a rule |
| 9.5 | 100 | 10 | Measuring angles |
| 9.5 | 100 | 10 | Using pi $\pi$ |
| 9.5 | 100 | 10 | Circumference using $C = \pi d = 2\pi r$ |
| 9.5 | 100 | 9 | Changing decimals to common fractions |
| 9.5 | 100 | 9 | Decimal equivalents |
| 9.5 | 100 | 8 | Addition of decimals |
| 9.5 | 100 | 8 | Subtraction of decimals |
| 23 | 90 | 9 | Multiplication, fractions |
| 23 | 90 | 9 | Division, fractions |
| 23 | 90 | 9 | Improper fractions, mixed |
| 23 | 90 | 9 | Addition, mixed numbers |
| 23 | 90 | 9 | Subtraction, mixed numbers |
| 23 | 90 | 9 | Multiplication, mixed numbers |
| 23 | 90 | 9 | Squaring a number |
| 23 | 90 | 9 | Area of rectangle |
| 23 | 90 | 9 | Area of square |
| 28.5 | 88.9 | 8 | Rounding numbers |
| 28.5 | 88.9 | 8 | Rounding off decimals |
| 30.5 | 87.5 | 7 | Multiplication of decimals |
| 30.5 | 87.5 | 7 | Division of decimals |
| 34.5 | 80 | 8 | Reading large numbers |
| 34.5 | 80 | 8 | Division, mixed numbers |
| 34.5 | 80 | 8 | Area of circle |
| 34.5 | 80 | 8 | Acute and obtuse angles |
| 34.5 | 80 | 8 | Area of circle using $A = \pi r 2$ |
| 34.5 | 80 | 8 | Area of triangle |
| 38 | 77.8 | 7 | Finding length of unknown side of right triangle |
| 40.5 | 66.7 | 6 | Comparing fractions |
| 40.5 | 66.7 | 6 | Changing per cent to decimals |
| 40.5 | 66.7 | 6 | Changing decimals to per cents |
| 40.5 | 66.7 | 6 | Micrometer reading |
| 43.5 | 62.5 | 5 | Dividing whole numbers and decimals by 10, 100, etc. |
| 43.5 | 62.5 | 5 | Meaning of percentage |
| 47.5 | 60 | 6 | Changing common fractions to per cents |
| 47.5 | 60 | 6 | Square root |
| 47.5 | 60 | 6 | Area of trapezoid |
| 47.5 | 60 | 6 | Area of parallelogram |
| 47.5 | 60 | 6 | Volume of cylinder |
| 47.5 | 60 | 6 | Volume of sphere |
| 51 | 57.1 | 4 | Multiplying whole numbers and decimals by 10, 100, etc. |
| 53 | 55.6 | 5 | Averages |
| 53 | 55.6 | 5 | Finding what part one number is of another |
| 53 | 55.6 | 5 | Simple algebraic equation with one unknown |
| 57.5 | 50 | 5 | Changing per cents to common fractions |
| 57.5 | 50 | 5 | Finding what per cent one number is of another |
| 57.5 | 50 | 5 | Volume of rectangular solid |
| 57.5 | 50 | 5 | Volume of cube |
| 57.5 | 50 | 4 | Volume of cone |
| 57.5 | 50 | 4 | Volume of pyramid |
| 62 | 44.4 | 4 | Finding per cent of a number |
| 62 | 44.4 | 4 | Finding a number when a per cent of it is known |
| 62 | 44.4 | 4 | Finding a number when a fractional part of it is known |
| 64 | 25 | 2 | Liquid measure |
| 65 | 14.3 | 1 | Ratio and proportion |
| 66 | 12.5 | 1 | Temperature conversion |

TABLE 32

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING METAL TRADES STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 2.5 | 90 | 9 | Improper fractions, mixed numbers |
| 2.5 | 90 | 9 | Reducing mixed numbers to simplest form |
| 2.5 | 90 | 9 | Acute and obtuse angles |
| 2.5 | 90 | 9 | Division, fractions |
| 5 | 87.5 | 7 | Division of decimals |
| 11 | 80 | 8 | Squaring a number |
| 11 | 80 | 8 | Using pi $\pi$ |
| 11 | 80 | 8 | Circumference using $C=\pi d=2\pi r$ |
| 11 | 80 | 8 | Multiplication, mixed numbers |
| 11 | 80 | 8 | Division, mixed numbers |
| 11 | 80 | 8 | Area of rectangle |
| 11 | 80 | 8 | Area of square |
| 11 | 80 | 8 | Multiplication, fractions |
| 11 | 80 | 8 | Area of triangle |
| 11 | 80 | 8 | Measuring angles |
| 11 | 80 | 8 | Changing common fractions to decimals |
| 20 | 77.8 | 7 | Volume of cube |
| 20 | 77.8 | 7 | Volume of cylinder |
| 20 | 77.8 | 7 | Changing decimals to common fractions |
| 20 | 77.8 | 7 | Decimal equivalents |
| 20 | 77.8 | 7 | Area of circle using $A=\pi r2$ |
| 20 | 77.8 | 7 | Area of parallelogram |
| 20 | 77.8 | 7 | Area of trapezoid |
| 25 | 75 | 6 | Volume of rectangular solid |
| 25 | 75 | 6 | Volume of sphere |
| 25 | 75 | 6 | Comparing fractions |
| 27.5 | 71.4 | 5 | Volume of cone |
| 27.5 | 71.4 | 5 | Volume of pyramid |
| 30 | 70 | 7 | Subtraction, mixed numbers |
| 30 | 70 | 7 | Area of circle |
| 30 | 70 | 7 | Subtraction, fractions |
| 33.5 | 66.7 | 6 | Finding length of unknown side of right triangle |
| 33.5 | 66.7 | 6 | Dividing whole numbers and decimals by 10, 100, etc. |
| 33.5 | 66.7 | 6 | Finding what per cent one number is of another |
| 33.5 | 66.7 | 6 | Square root |
| 38 | 62.5 | 5 | Finding a number when a per cent of it is known |
| 38 | 62.5 | 5 | Finding what part one number is of another |
| 38 | 62.5 | 5 | Finding a number when a fractional part of it is known |
| 38 | 62.5 | 5 | Multiplying whole numbers and decimals by 10, 100,etc. |
| 38 | 62.5 | 5 | Micrometer reading |
| 45.5 | 60 | 6 | Changing per cent to decimals |
| 45.5 | 60 | 6 | Changing decimals to per cents |
| 45.5 | 60 | 6 | Changing per cents to common fractions |
| 45.5 | 60 | 6 | Changing common fractions to per cents |
| 45.5 | 60 | 3 | Temperature conversion |
| 45.5 | 60 | 3 | Ratio and proportion |
| 45.5 | 60 | 6 | Reading a rule |
| 45.5 | 60 | 6 | Reducing fractions to lowest terms |
| 45.5 | 60 | 6 | Addition, fractions |
| 45.5 | 60 | 6 | Addition, mixed numbers |
| 52.5 | 55.6 | 5 | Reading, writing decimals |
| 52.5 | 55.6 | 5 | Rounding off decimals |
| 52.5 | 55.6 | 5 | Meaning of percentage |
| 52.5 | 55.6 | 5 | Simple algebraic equation with one unknown |
| 56 | 50 | 4 | Addition of decimals |
| 56 | 50 | 4 | Subtraction of decimals |
| 56 | 50 | 4 | Multiplication of decimals |
| 59 | 44.4 | 4 | Reading large numbers |
| 59 | 44.4 | 4 | Rounding numbers |
| 59 | 44.4 | 4 | Finding per cent of a number |
| 61 | 40 | 4 | Multiplication, whole numbers |
| 62 | 33.3 | 2 | Liquid measure |
| 63 | 30 | 3 | Division, whole numbers |
| 64.5 | 20 | 2 | Addition, whole numbers |
| 64.5 | 20 | 2 | Subtraction, whole numbers |
| 66 | 25 | 2 | Averages |

TABLE 33

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF MILL AND CABINET MAKING TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 96 | 24 | Circumference using $C=\pi d=2\pi r$ |
| 2 | 92.9 | 26 | Measuring angles |
| 3 | 92.3 | 24 | Finding length of unknown side of right triangle |
| 4 | 92 | 23 | Area of circle using $A=\pi r2$ |
| 5 | 90 | 18 | Simple algebraic equation with one unknown |
| 6.5 | 88.9 | 24 | Multiplication, fractions |
| 6.5 | 88.9 | 24 | Division, fractions |
| 8.5 | 87.5 | 21 | Acute and obtuse angles |
| 8.5 | 87.5 | 21 | Area of triangle |
| 10 | 87 | 20 | Changing common fractions to decimals |
| 11 | 85.7 | 18 | Volume of cube |
| 12 | 85.2 | 23 | Subtraction, fractions |
| 13.5 | 85 | 17 | Volume of cone |
| 13.5 | 85 | 17 | Volume of pyramid |
| 16 | 84 | 21 | Square root |
| 16 | 84 | 21 | Using pi $\pi$ |
| 16 | 84 | 21 | Division, mixed numbers |
| 18 | 83.3 | 20 | Area of circle |
| 19 | 82 | 21 | Improper fractions, mixed numbers |
| 20.5 | 81.8 | 18 | Area of parallelogram |
| 20.5 | 81.8 | 18 | Area of trapezoid |
| 22.5 | 81.5 | 22 | Subtraction, mixed numbers |
| 22.5 | 81.5 | 22 | Addition, fractions |
| 24 | 81 | 17 | Volume of rectangular solid |
| 25 | 80.8 | 21 | Reducing fractions to lowest terms |
| 26.5 | 80 | 20 | Changing decimals to common fractions |
| 26.5 | 80 | 20 | Comparing fractions |
| 28.5 | 79.2 | 9 | Reading, writing decimals |
| 28.5 | 79.2 | 19 | Rounding off decimals |
| 30 | 77.8 | 14 | Temperature conversion |
| 31 | 76.9 | 20 | Multiplication, mixed numbers |
| 33 | 76.2 | 16 | Ratio and proportion |
| 33 | 76.2 | 16 | Volume of cylinder |
| 33 | 76.2 | 16 | Volume of sphere |
| 35.5 | 76 | 19 | Area of rectangle |
| 35.5 | 76 | 19 | Reducing mixed numbers to simplest form |
| 37 | 75 | 18 | Decimal equivalents |
| 38 | 73.7 | 14 | Micrometer reading |
| 39 | 74.1 | 20 | Addition, mixed numbers |
| 40 | 72 | 18 | Changing common fractions to per cents |
| 43 | 70.8 | 17 | Changing per cent to decimals |
| 43 | 70.8 | 17 | Changing decimals to per cents |
| 43 | 70.8 | 17 | Changing per cents to common fractions |
| 43 | 70.8 | 17 | Averages |
| 43 | 70.8 | 17 | Finding per cent of a number |
| 46 | 69.6 | 16 | Finding a number when a fractional part of it is known |
| 47 | 68 | 17 | Squaring a number |
| 48.5 | 65.2 | 15 | Finding a number when a per cent of it is known |
| 48.5 | 65.2 | 15 | Finding what part one number is of another |
| 50 | 65 | 13 | Liquid measure |
| 51 | 64 | 16 | Area of square |
| 52.5 | 60.9 | 14 | Division of decimals |
| 52.5 | 60.9 | 14 | Finding what per cent one number is of another |
| 54.5 | 56.5 | 13 | Multiplication of decimals |
| 54.5 | 56.5 | 13 | Meaning of percentage |
| 56 | 53.6 | 15 | Reading a rule |
| 57 | 50 | 13 | Division, whole numbers |
| 58.5 | 45.8 | 11 | Addition of decimals |
| 58.5 | 45.8 | 11 | Subtraction of decimals |
| 60.5 | 43.5 | 10 | Multiplying whole numbers and decimals by 10,100,etc. |
| 60.5 | 43.5 | 10 | Dividing whole numbers and decimals by 10,100,etc. |
| 62 | 44.4 | 12 | Multiplication, whole numbers |
| 63 | 44 | 11 | Reading large numbers |
| 64 | 38.5 | 10 | Rounding numbers |
| 65.5 | 25.9 | 7 | Addition, whole numbers |
| 65.5 | 25.9 | 7 | Subtraction, whole numbers |

TABLE 34

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING MILL & CABINET MAKING STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 96 | 24 | Circumference using C = $\pi$d = 2$\pi$r |
| 2 | 92.9 | 26 | Measuring angles |
| 3 | 92.3 | 24 | Finding length of unknown side of right triangle |
| 4 | 92 | 23 | Area of circle using A = $\pi$r 2 |
| 5 | 90 | 18 | Simple algebraic equation with one unknown |
| 6.5 | 88.9 | 24 | Multiplication, fractions |
| 6.5 | 88.9 | 24 | Division, fractions |
| 8.5 | 87.5 | 21 | Acute and obtuse angles |
| 8.5 | 87.5 | 21 | Area of triangle |
| 10 | 87 | 20 | Changing common fractions to decimals |
| 11 | 85.7 | 18 | Volume of cube |
| 12 | 85.2 | 23 | Subtraction, fractions |
| 13.5 | 85 | 17 | Volume of cone |
| 13.5 | 85 | 17 | Volume of pyramid |
| 16 | 84 | 21 | Square root |
| 16 | 84 | 21 | Using pi$\pi$ |
| 16 | 84 | 21 | Division, mixed numbers |
| 18 | 83.3 | 20 | Area of circle |
| 19 | 82 | 21 | Improper fractions, mixed numbers |
| 20.5 | 81.8 | 18 | Area of parallelogram |
| 20.5 | 81.8 | 18 | Area of trapezoid |
| 22.5 | 81.5 | 22 | Subtraction, mixed numbers |
| 22.5 | 81.5 | 22 | Addition, fractions |
| 24 | 81 | 17 | Volume of rectangular solid |
| 25 | 80.8 | 21 | Reducing fractions to lowest terms |
| 26.5 | 80 | 20 | Changing decimals to common fractions |
| 26.5 | 80 | 20 | Comparing fractions |
| 28.5 | 79.2 | 19 | Reading, writing decimals |
| 28.5 | 79.2 | 19 | Rounding off decimals |
| 30 | 77.8 | 14 | Temperature conversion |
| 31 | 76.9 | 20 | Multiplication, mixed numbers |
| 33 | 76.2 | 16 | Ratio and proportion |
| 33 | 76.2 | 16 | Volume of cylinder |
| 33 | 76.2 | 16 | Volume of sphere |
| 35.5 | 76 | 19 | Area of rectangle |
| 35.5 | 76 | 19 | Reducing mixed numbers to simplest form |
| 37 | 75 | 18 | Decimal equivalents |
| 38 | 73.7 | 14 | Micrometer reading |
| 39 | 74.1 | 20 | Addition, mixed numbers |
| 40 | 72 | 18 | Changing common fractions to per cents |
| 43 | 70.8 | 17 | Changing per cent to decimals |
| 43 | 70.8 | 17 | Changing decimals to per cents |
| 43 | 70.8 | 17 | Changing per cents to common fractions |
| 43 | 70.8 | 17 | Averages |
| 43 | 70.8 | 17 | Finding per cent of a number |
| 46 | 69.6 | 16 | Finding a number when a fractional part of it is known |
| 47 | 68 | 17 | Squaring a number |
| 48.5 | 65.2 | 15 | Finding a number when a per cent of it is known |
| 48.5 | 65.2 | 15 | Finding what part one number is of another |
| 50 | 65 | 13 | Liquid measure |
| 51 | 64 | 16 | Area of square |
| 52.5 | 60.9 | 14 | Division of decimals |
| 52.5 | 60.9 | 14 | Finding what per cent one number is of another |
| 54.5 | 56.5 | 13 | Multiplication of decimals |
| 54.5 | 56.5 | 13 | Meaning of percentage |
| 56 | 53.6 | 15 | Reading a rule |
| 57 | 50 | 13 | Division, whole numbers |
| 58.5 | 45.8 | 11 | Addition of decimals |
| 58.5 | 45.8 | 11 | Subtraction of decimals |
| 60.5 | 43.5 | 10 | Multiplying whole numbers and decimals by 10,100, etc. |
| 60.5 | 43.5 | 10 | Dividing whole numbers and decimals by 10,100,etc. |
| 62 | 44.4 | 12 | Multiplication, whole numbers |
| 63 | 44 | 11 | Reading large numbers |
| 64 | 38.5 | 10 | Rounding numbers |
| 65.5 | 25.9 | 7 | Addition, whole numbers |
| 65.5 | 25.9 | 7 | Subtraction, whole numbers |

TABLE 35

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF PRINTING GRAPHIC ARTS TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 100 | 47 | Multiplication, whole numbers |
| 2 | 97.9 | 46 | Division, whole numbers |
| 3.5 | 97.8 | 44 | Addition, whole numbers |
| 3.5 | 97.8 | 45 | Subtraction, whole numbers |
| 5 | 95.7 | 45 | Reading a rule |
| 6.5 | 88.9 | 40 | Addition, fractions |
| 6.5 | 88.9 | 40 | Subtraction, fractions |
| 8 | 86.4 | 38 | Multiplication, fractions |
| 9 | 83 | 39 | Liquid measure |
| 10 | 82.2 | 37 | Ratio and proportion |
| 11.5 | 78.3 | 36 | Division, fractions |
| 11.5 | 78.3 | 36 | Addition, mixed numbers |
| 13.5 | 77.8 | 35 | Subtraction, mixed numbers |
| 13.5 | 77.8 | 35 | Reading, writing decimals |
| 15 | 75.6 | 34 | Multiplication, mixed numbers |
| 16 | 75 | 33 | Reducing fractions to lowest terms |
| 17 | 74.5 | 35 | Micrometer reading |
| 18 | 73.2 | 33 | Meaning of percentage |
| 19 | 72.7 | 32 | Reducing mixed numbers to simplest form |
| 20 | 70.5 | 31 | Division, mixed numbers |
| 21 | 68.9 | 31 | Changing common fractions |
| 22 | 68.2 | 30 | Improper fractions, mixed |
| 23 | 65.1 | 28 | Reading large numbers |
| 25 | 64.4 | 29 | Rounding numbers |
| 25 | 64.4 | 29 | Rounding off decimals |
| 25 | 64.4 | 29 | Subtraction of decimals |
| 27 | 63 | 29 | Finding per cent of a number |
| 28.5 | 62.2 | 28 | Dividing whole numbers and decimals by 10, 100, etc. |
| 28.5 | 62.2 | 28 | Addition of decimals |
| 38 | 60 | 27 | Multiplication of decimals |
| 31.5 | 59.1 | 26 | Multiplying whole numbers and decimals by 10, 100, etc. |
| 31.5 | 59.1 | 26 | Averages |
| 33 | 58.1 | 25 | Changing decimals to common fractions |
| 34 | 57.8 | 26 | Division of decimals |
| 35 | 55.6 | 25 | Changing per cent to decimals |
| 36 | 51.2 | 22 | Decimal equivalents |
| 37.5 | 50 | 22 | Finding what per cent one number is of another |
| 37.5 | 50 | 22 | Comparing fractions |
| 39 | 48.9 | 22 | Changing decimals to per cents |
| 40 | 48.8 | 21 | Finding a number when a per cent of it is known |
| 41 | 46.7 | 21 | Changing common fractions to per cents |
| 42 | 44.2 | 19 | Finding what part one number is of another |
| 43 | 40.9 | 18 | Changing per cents to common fractions |
| 44 | 38.6 | 17 | Measuring angles |
| 45 | 36.6 | 15 | Finding a number when a fractional part of it is known |
| 46 | 30.2 | 13 | Simple algebraic equation with one unknown |
| 47 | 27.9 | 12 | Area of square |
| 48 | 25.6 | 11 | Area of rectangle |
| 49 | 22.7 | 10 | Temperature conversion |
| 50 | 22.2 | 10 | Squaring a number |
| 51 | 18.6 | 8 | Area of circle |
| 52 | 13.6 | 6 | Acute and obtuse angles |
| 53 | 11.6 | 5 | Area of triangle |
| 54 | 11.1 | 5 | Square root |
| 55 | 9.3 | 4 | Area of parallelogram |
| 57 | 7 | 3 | Volume of rectangular solid |
| 57 | 7 | 3 | Volume of cube |
| 57 | 7 | 3 | Trapezoid |
| 59 | 6.8 | 3 | Finding length of unknown side of right triangle |
| 60 | 4.7 | 2 | Volume of cylinder |
| 61 | 2.4 | 1 | Area of circle using $A = \pi r^2$ |
| 62.5 | 2.3 | 1 | Circumference using $C = \pi d = 2\pi r$ |
| 62.5 | 2.3 | 1 | Using pi $\pi$ |
| 65.5 | 0 | 0 | Volume of cone |
| 65 | 0 | 0 | Volume of sphere |
| 65 | 0 | 0 | Volume of pyramid |

TABLE 36

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING PRINTING GRAPHIC ARTS STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 86.4 | 38 | Multiplication, fractions |
| 2 | 82.2 | 37 | Division, fractions |
| 3 | 81.4 | 35 | Micrometer reading |
| 4 | 80.4 | 37 | Subtraction, fractions |
| 5.5 | 79.5 | 31 | Improper fractions, mixed numbers |
| 5.5 | 79.5 | 31 | Reducing mixed numbers to simplest form |
| 7 | 77.8 | 35 | Addition, fractions |
| 8 | 77.3 | 34 | Ratio and proportion |
| 9.5 | 73.2 | 30 | Division, mixed numbers |
| 9.5 | 73.2 | 30 | Reducing fractions to lowest terms |
| 11 | 73 | 27 | Comparing fractions |
| 12 | 70.9 | 29 | Changing common fractions to decimals |
| 13 | 70.6 | 24 | Finding a number when a fractional part of it is known |
| 14.5 | 69.8 | 30 | Subtraction, mixed numbers |
| 14.5 | 69.8 | 30 | Multiplication, mixed numbers |
| 16 | 67.6 | 25 | Changing decimals to per cents |
| 17 | 67.4 | 29 | Addition, mixed numbers |
| 19 | 66.7 | 24 | Measuring angles |
| 19 | 66.7 | 22 | Simple algebraic equation with one unknown |
| 19 | 66.7 | 24 | Finding what part one number is of another |
| 21 | 65.7 | 23 | Finding what per cent one number is of another |
| 22.5 | 64.5 | 20 | Area of circle |
| 22.5 | 64.5 | 20 | Square root |
| 24 | 63.9 | 23 | Finding a number when a per cent of it is known |
| 25 | 63.3 | 19 | Area of trapezoid |
| 26.5 | 62.2 | 23 | Decimal equivalents |
| 26.5 | 62.2 | 23 | Changing common fractions to per cents |
| 28 | 62.1 | 18 | Volume of cube |
| 29 | 61.5 | 24 | Finding per cent of a number |
| 31.5 | 60 | 18 | Using pi $\pi$ |
| 31.5 | 60 | 18 | Area of parallelogram |
| 31.5 | 60 | 18 | Area of triangle |
| 31.5 | 60 | 21 | Changing per cents to common fractions |
| 34 | 58.7 | 27 | Reading a rule |
| 37.5 | 58.6 | 17 | Area of circle using $A = \pi r^2$ |
| 37.5 | 58.6 | 17 | Volume of cylinder |
| 37.5 | 58.6 | 17 | Volume of sphere |
| 37.5 | 58.6 | 17 | Volume of cone |
| 37.5 | 58.6 | 17 | Volume of pyramid |
| 37.5 | 58.6 | 17 | Volume of rectangular solid |
| 41 | 58.1 | 18 | Finding length of unknown side of right triangle |
| 42 | 57.9 | 22 | Changing per cent to decimals |
| 43 | 57.5 | 23 | Meaning of percentage |
| 44 | 56.8 | 21 | Changing decimals to common fractions |
| 45 | 56.7 | 17 | Circumference using $C = \pi d = 2\pi r$ |
| 46 | 56.3 | 18 | Acute and obtuse angles |
| 47 | 56.1 | 23 | Division of decimals |
| 48 | 55.8 | 24 | Reading, writing decimals |
| 49 | 55 | 22 | Rounding off decimals |
| 50 | 54.5 | 18 | Temperature conversion |
| 51 | 54.3 | 19 | Area of rectangle |
| 52 | 52.2 | 24 | Liquid measure |
| 53 | 51.4 | 18 | Squaring a number |
| 54 | 51.3 | 20 | Averages |
| 55 | 51.2 | 21 | Dividing whole numbers and decimals by 10, 100, etc. |
| 56 | 50 | 17 | Area of square |
| 57 | 47.5 | 19 | Multiplication of decimals |
| 58 | 46.3 | 19 | Multiplying whole numbers and decimals by 10,100,etc. |
| 59 | 45.7 | 21 | Division, whole numbers |
| 60 | 41.3 | 19 | Multiplication, whole numbers |
| 61 | 36.6 | 15 | Subtraction of decimals |
| 62 | 35.4 | 16 | Rounding numbers |
| 63 | 34.1 | 14 | Addition of decimals |
| 64 | 33.3 | 15 | Subtraction, whole numbers |
| 65 | 24.4 | 11 | Addition, whole numbers |
| 66 | 19 | 8 | Reading large numbers |

TABLE 37

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF PLUMBING TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 11 | 100 | 16 | Rounding numbers |
| 11 | 100 | 16 | Addition, whole numbers |
| 11 | 100 | 16 | Subtraction, whole numbers |
| 11 | 100 | 16 | Multiplication, whole numbers |
| 11 | 100 | 16 | Division, whole numbers |
| 11 | 100 | 14 | Finding length of unknown side of right triangle |
| 11 | 100 | 15 | Using pi $\pi$ |
| 11 | 100 | 15 | Circumference using $C = \pi d = 2\pi r$ |
| 11 | 100 | 16 | Area of circle using $A = \pi r^2$ |
| 11 | 100 | 16 | Area of rectangle |
| 11 | 100 | 15 | Area of square |
| 11 | 100 | 15 | Area of circle |
| 11 | 100 | 15 | Volume of rectangular solid |
| 11 | 100 | 16 | Reading a rule |
| 11 | 100 | 16 | Volume of cylinder |
| 11 | 100 | 15 | Measuring angles |
| 11 | 100 | 14 | Area of triangle |
| 11 | 100 | 16 | Addition, fractions |
| 11 | 100 | 16 | Subtraction, fractions |
| 11 | 100 | 16 | Addition, mixed numbers |
| 11 | 100 | 16 | Subtraction, mixed numbers |
| 26 | 93.8 | 15 | Averages |
| 26 | 93.8 | 15 | Reducing fractions to lowest terms |
| 26 | 93.8 | 15 | Liquid measure |
| 26 | 93.8 | 15 | Temperature conversion |
| 26 | 93.8 | 15 | Comparing fractions |
| 26 | 93.8 | 15 | Changing common fractions to decimals |
| 26 | 93.8 | 15 | Addition of decimals |
| 26 | 93.8 | 15 | Volume of cube |
| 26 | 93.8 | 15 | Meaning of percentage |
| 31.5 | 93.3 | 14 | Square root |
| 31.5 | 93.3 | 14 | Multiplying whole numbers and decimals by 10, 100, etc. |
| 33 | 92.9 | 13 | Area of parallelogram |
| 34 | 87.7 | 12 | Finding per cent of a number |
| 38.5 | 87.5 | 14 | Rounding off decimals |
| 38.5 | 87.5 | 14 | Division, fractions |
| 38.5 | 87.5 | 14 | Subtraction of decimals |
| 38.5 | 87.5 | 14 | Multiplication of decimals |
| 38.5 | 87.5 | 14 | Division of decimals |
| 38.5 | 87.5 | 14 | Changing decimals to common fractions |
| 38.5 | 87.5 | 14 | Multiplication, mixed numbers |
| 38.5 | 87.5 | 14 | Reading, writing decimals |
| 44 | 86.7 | 13 | Dividing whole numbers and decimals by 10, 100, etc. |
| 44 | 86.7 | 13 | Reducing mixed numbers to simplest form |
| 44 | 86.7 | 13 | Acute and obtuse angles |
| 48 | 81.3 | 13 | Changing per cent to decimals |
| 48 | 81.3 | 13 | Changing decimals to per cents |
| 48 | 81.3 | 13 | Decimal equivalents |
| 48 | 81.3 | 13 | Multiplication, fractions |
| 48 | 81.3 | 13 | Squaring a number |
| 51 | 78.6 | 11 | Area of trapezoid |
| 53 | 75 | 12 | Improper fractions, mixed numbers |
| 53 | 75 | 12 | Reading large numbers |
| 53 | 75 | 12 | Division, mixed numbers |
| 55 | 73.3 | 11 | Volume of sphere |
| 56 | 71.4 | 10 | Finding what per cent one number is of another |
| 57 | 69.2 | 9 | Volume of pyramid |
| 58 | 68.8 | 11 | Changing common fractions to per cents |
| 59 | 66.7 | 10 | Simple algebraic equation with one unknown |
| 60 | 64.3 | 9 | Ratio and proportion |
| 61 | 61.5 | 8 | Volume of cone |
| 62 | 60 | 9 | Changing per cents to common fractions |
| 63 | 57.1 | 8 | Finding a number when a fractional part of it is known |
| 64.5 | 53.8 | 7 | Finding a number when a per cent of it is known |
| 64.5 | 53.8 | 7 | Finding what part one number is of another |
| 66 | 42.9 | 6 | Micrometer reading |

TABLE 38

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING PLUMBING STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1.5 | 93.3 | 14 | Volume of sphere |
| 1.5 | 93.3 | 14 | Changing decimals to per cents |
| 4.5 | 92.9 | 13 | Finding length of unknown side of right triangle |
| 4.5 | 92.9 | 13 | Decimal equivalents |
| 4.5 | 92.9 | 13 | Changing per cents to common fractions |
| 4.5 | 92.9 | 13 | Area of trapezoid |
| 8.5 | 92.3 | 12 | Volume of cone |
| 8.5 | 92.3 | 12 | Volume of pyramid |
| 8.5 | 92.3 | 12 | Finding what per cent one number is of another |
| 8.5 | 92.3 | 12 | Finding a number when a fractional part of it is known |
| 11.5 | 91.7 | 11 | Finding what part one number is of another |
| 11.5 | 91.7 | 11 | Finding a number when a percent of it is known |
| 14 | 87.5 | 14 | Volume of cube |
| 14 | 87.5 | 14 | Volume of cylinder |
| 14 | 87.5 | 14 | Temperature conversion |
| 18.5 | 86.7 | 13 | Acute and obtuse angles |
| 18.5 | 86.7 | 13 | Simple algebraic equation with one unknown |
| 18.5 | 86.7 | 13 | Changing common fractions to per cents |
| 18.5 | 86.7 | 13 | Meaning of percentage |
| 18.5 | 86.7 | 13 | Changing per cent to decimals |
| 18.5 | 86.7 | 13 | Changing decimals to common fractions |
| 24 | 85.7 | 12 | Ratio and proportion |
| 24 | 85.7 | 12 | Division of decimals |
| 24 | 85.7 | 12 | Square root |
| 24 | 85.7 | 12 | Area of parallelogram |
| 24 | 85.7 | 12 | Area of triangle |
| 27 | 84.6 | 11 | Finding per cent of a number |
| 28 | 81.8 | 9 | Micrometer reading |
| 31 | 81.3 | 13 | Reducing fractions to lowest terms |
| 31 | 81.3 | 13 | Area of circle using $A=\pi r2$ |
| 31 | 81.3 | 13 | Liquid measure |
| 31 | 81.3 | 13 | Rounding off decimals |
| 31 | 81.3 | 13 | Changing common fractions to decimals |
| 35.5 | 80 | 12 | Volume of rectangular solid |
| 35.5 | 80 | 12 | Circumference using $C=\pi d=2\pi r$ |
| 35.5 | 80 | 12 | Averages |
| 35.5 | 80 | 12 | Measuring angles |
| 39.5 | 78.6 | 11 | Dividing whole numbers and decimals by 10,100,etc. |
| 39.5 | 78.6 | 11 | Addition of decimals |
| 39.5 | 78.6 | 11 | Subtraction of decimals |
| 39.5 | 78.6 | 11 | Multiplication of decimals |
| 43.5 | 75 | 12 | Improper fractions, mixed numbers |
| 43.5 | 75 | 12 | Multiplication, mixed numbers |
| 43.5 | 75 | 12 | Division, mixed numbers |
| 43.5 | 75 | 12 | Using pi $\pi$ |
| 47 | 73.3 | 11 | Area of circle |
| 47 | 73.3 | 11 | Squaring a number |
| 47 | 73.3 | 11 | Reducing mixed numbers to simplest form |
| 49 | 71.4 | 10 | Multiplying whole numbers and decimals by 10,100,etc. |
| 52.5 | 68.8 | 11 | Area of rectangle |
| 52.5 | 68.8 | 11 | Addition, mixed numbers |
| 52.5 | 68.8 | 11 | Subtraction, mixed numbers |
| 52.5 | 68.8 | 11 | Multiplication, fractions |
| 52.5 | 68.8 | 11 | Division, fractions |
| 52.5 | 68.8 | 11 | Rounding numbers |
| 57 | 66.7 | 10 | Reading a rule |
| 57 | 66.7 | 10 | Comparing fractions |
| 57 | 66.7 | 10 | Area of square |
| 59 | 62.5 | 10 | Reading, writing decimals |
| 60 | 56.3 | 9 | Subtraction, fractions |
| 61 | 50 | 8 | Addition, fractions |
| 62 | 46.7 | 7 | Reading large numbers |
| 63 | 43.8 | 7 | Division, whole numbers |
| 64 | 37.5 | 6 | Multiplication, whole numbers |
| 65 | 31.3 | 5 | Subtraction, whole numbers |
| 66 | 25 | 4 | Addition, whole numbers |

TABLE 39

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF SHEET METAL TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 11.5 | 100 | 16 | Using pi $\pi$ |
| 11.5 | 100 | 16 | Circumference using $C = \pi d = 2\pi r$ |
| 11.5 | 100 | 16 | Area of circle using $A = \pi r^2$ |
| 11.5 | 100 | 16 | Area of rectangle |
| 11.5 | 100 | 16 | Area of square |
| 11.5 | 100 | 16 | Reading, writing decimals |
| 11.5 | 100 | 16 | Rounding off decimals |
| 11.5 | 100 | 16 | Changing common fractions to decimals |
| 11.5 | 100 | 16 | Changing decimals to common fractions |
| 11.5 | 100 | 16 | Decimal equivalents |
| 11.5 | 100 | 16 | Addition of decimals |
| 11.5 | 100 | 16 | Multiplication of decimals |
| 11.5 | 100 | 16 | Reading a rule |
| 11.5 | 100 | 16 | Rounding numbers |
| 11.5 | 100 | 16 | Multiplication, whole numbers |
| 11.5 | 100 | 16 | Addition, whole numbers |
| 11.5 | 100 | 16 | Division, whole numbers |
| 11.5 | 100 | 16 | Reducing fractions to lowest terms |
| 11.5 | 100 | 16 | Addition, fractions |
| 11.5 | 100 | 16 | Addition, mixed numbers |
| 11.5 | 100 | 16 | Reducing mixed numbers to simplest form |
| 11.5 | 100 | 16 | Multiplication, fractions |
| 30.5 | 93.8 | 15 | Acute and obtuse angles |
| 30.5 | 93.8 | 15 | Measuring angles |
| 30.5 | 93.8 | 15 | Finding length of unknown side of right triangle |
| 30.5 | 93.8 | 15 | Area of parallelogram |
| 30.5 | 93.8 | 15 | Area of triangle |
| 30.5 | 93.8 | 15 | Area of circle |
| 30.5 | 93.8 | 15 | Reading large numbers |
| 30.5 | 93.8 | 15 | Subtraction of decimals |
| 30.5 | 93.8 | 15 | Division, fractions |
| 30.5 | 93.8 | 15 | Subtraction, fractions |
| 30.5 | 93.8 | 15 | Dividing whole numbers and decimals by 10,100,etc. |
| 30.5 | 93.8 | 15 | Subtraction, whole numbers |
| 30.5 | 93.8 | 15 | Division of decimals |
| 30.5 | 93.8 | 15 | Improper fractions, mixed numbers |
| 30.5 | 93.8 | 15 | Subtraction, mixed numbers |
| 30.5 | 93.8 | 15 | Multiplication, mixed numbers |
| 39 | 93.3 | 14 | Comparing fractions |
| 41 | 87.5 | 14 | Volume of cylinder |
| 41 | 87.5 | 14 | Division, mixed numbers |
| 41 | 87.5 | 14 | Multiplying whole numbers and decimals by 10,100,etc |
| 46 | 86.7 | 13 | Volume of cone |
| 46 | 86.7 | 13 | Volume of pyramid |
| 46 | 86.7 | 13 | Squaring a number |
| 46 | 86.7 | 13 | Micrometer reading |
| 46 | 86.7 | 13 | Area of trapezoid |
| 46 | 86.7 | 13 | Volume of cube |
| 46 | 86.7 | 13 | Meaning of percentage |
| 50 | 85.7 | 12 | Square root |
| 53.5 | 80 | 12 | Volume of sphere |
| 53.5 | 80 | 12 | Changing per cent to decimals |
| 53.5 | 80 | 12 | Finding what part one number is of another |
| 53.5 | 80 | 12 | Ratio and proportion |
| 53.5 | 80 | 12 | Simple algebraic equation with one unknown |
| 53.5 | 80 | 12 | Volume of rectangular solid |
| 57 | 78.6 | 11 | Averages |
| 58.5 | 71.4 | 10 | Liquid measure |
| 58.5 | 71.4 | 10 | Finding a number when a fractional part of it is known |
| 60.5 | 66.7 | 10 | Changing decimals to per cents |
| 60.5 | 66.7 | 10 | Finding per cent of a number |
| 63 | 60 | 9 | Finding what per cent one number is of another |
| 63 | 60 | 9 | Changing per cents to common fractions |
| 63 | 60 | 9 | Changing common fractions to per cents |
| 65 | 50 | 7 | Finding a number when a per cent of it is known |
| 66 | 46.7 | 7 | Temperature conversion |

TABLE 40

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING SHEETMETAL STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 92.3 | 12 | Temperature conversion |
| 2 | 91.7 | 11 | Liquid measure |
| 4.5 | 87.5 | 14 | Finding length of unknown side of right triangle |
| 4.5 | 87.5 | 14 | Using pi $\pi$ |
| 4.5 | 87.5 | 14 | Circumference using $C = \pi d = 2\pi r$ |
| 4.5 | 87.5 | 14 | Area of circle using $A = \pi r^2$ |
| 8.5 | 86.7 | 13 | Square root |
| 8.5 | 86.7 | 13 | Volume of cone |
| 8.5 | 86.7 | 13 | Volume of pyramid |
| 8.5 | 86.7 | 13 | Area of trapezoid |
| 11 | 85.5 | 12 | Ratio and proportion |
| 12 | 87.7 | 14 | Measuring angles |
| 13 | 83.3 | 10 | Finding what per cent one number is of another |
| 15 | 81.3 | 13 | Acute and obtuse angles |
| 15 | 81.3 | 13 | Area of circle |
| 15 | 81.3 | 13 | Volume of cylinder |
| 20.5 | 80 | 12 | Changing common fractions to decimals |
| 20.5 | 80 | 12 | Decimal equivalents |
| 20.5 | 80 | 12 | Multiplication, fractions |
| 20.5 | 80 | 12 | Reducing mixed numbers to simplest form |
| 20.5 | 80 | 12 | Simple algebraic equation with one unknown |
| 20.5 | 80 | 12 | Volume of rectangular solid |
| 20.5 | 80 | 12 | Volume of cube |
| 20.5 | 80 | 12 | Volume of sphere |
| 25 | 78.6 | 11 | Finding what part one number is of another |
| 26.5 | 75 | 12 | Area of parallelogram |
| 26.5 | 75 | 12 | Area of triangle |
| 30 | 73.3 | 11 | Changing decimals to common fractions |
| 30 | 73.3 | 11 | Micrometer reading |
| 30 | 73.3 | 11 | Squaring a number |
| 30 | 73.3 | 4 | Division, fractions |
| 30 | 73.3 | 11 | Reading, writing decimals |
| 33 | 71.4 | 10 | Comparing fractions |
| 34 | 68.8 | 11 | Area of rectangle |
| 37 | 66.7 | 10 | Addition, mixed numbers |
| 37 | 66.7 | 10 | Addition, fractions |
| 37 | 66.7 | 10 | Improper fractions, mixed numbers |
| 37 | 66.7 | 10 | Reading a rule |
| 37 | 66.7 | 8 | Finding a number when a per cent of it is known |
| 40 | 64.3 | 9 | Multiplication, mixed numbers |
| 41.5 | 62.5 | 10 | Area of square |
| 41.5 | 62.5 | 10 | Rounding off decimals |
| 45.5 | 60 | 9 | Reducing fractions to lowest terms |
| 45.5 | 60 | 9 | Subtraction, mixed numbers |
| 45.5 | 60 | 9 | Subtraction, fractions |
| 45.5 | 60 | 9 | Multiplication of decimals |
| 45.5 | 60 | 9 | Meaning of percentage |
| 45.5 | 60 | 9 | Changing per cent to decimals |
| 49.5 | 58.3 | 7 | Changing decimals to per cents |
| 49.5 | 58.3 | 7 | Changing per cents to common fractions |
| 51.5 | 57.1 | 8 | Finding a number when a fractional part of it is known |
| 51.5 | 57.1 | 8 | Division, mixed numbers |
| 53 | 53.3 | 8 | Addition of decimals |
| 54.5 | 46.7 | 7 | Subtraction of decimals |
| 54.5 | 46.7 | 7 | Division, whole numbers |
| 56 | 43.8 | 7 | Multiplying whole numbers and decimals by 10,100,etc. |
| 59 | 50 | 6 | Changing common fractions to per cents |
| 59 | 50 | 6 | Finding per cent of a number |
| 59 | 50 | 8 | Division of decimals |
| 59 | 50 | 8 | Dividing whole numbers and decimals by 10,100,etc. |
| 59 | 50 | 7 | Averages |
| 63 | 40 | 6 | Reading large numbers |
| 63 | 40 | 6 | Rounding numbers |
| 63 | 40 | 6 | Multiplication, whole numbers |
| 65.5 | 26.7 | 4 | Addition, whole numbers |
| 65.5 | 26.7 | 4 | Subtraction, whole numbers |

TABLE 41

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF T & I OTHERS TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1.5 | 100 | 34 | Subtraction, whole numbers |
| 1.5 | 100 | 34 | Addition, whole numbers |
| 3.5 | 97.1 | 33 | Multiplication, whole numbers |
| 3.5 | 97.1 | 33 | Reading, writing decimals |
| 5 | 91.7 | 33 | Division, whole numbers |
| 7 | 91.2 | 31 | Subtraction of decimals |
| 7 | 91.2 | 31 | Addition of decimals |
| 7 | 91.2 | 31 | Meaning of percentage |
| 10 | 88.2 | 30 | Averages |
| 10 | 88.2 | 30 | Multiplying whole numbers and decimals by 10,100,etc. |
| 10 | 88.2 | 30 | Changing common fractions to decimals |
| 12 | 87.9 | 29 | Reading a rule |
| 13.5 | 85.3 | 29 | Rounding numbers |
| 13.5 | 85.3 | 29 | Reading large numbers |
| 17 | 82.4 | 28 | Finding per cent of a number |
| 17 | 82.4 | 28 | Multiplication of decimals |
| 17 | 82.4 | 28 | Dividing whole numbers and decimals by 10,100,etc. |
| 17 | 82.4 | 28 | Changing per cent to decimals |
| 17 | 82.4 | 28 | Rounding off decimals |
| 22 | 79.4 | 27 | Addition, mixed numbers |
| 22 | 79.4 | 27 | Subtraction, fractions |
| 22 | 79.4 | 27 | Addition, fractions |
| 22 | 79.4 | 27 | Changing decimals to per cents |
| 22 | 79.4 | 27 | Subtraction, mixed numbers |
| 26 | 76.5 | 26 | Multiplication, fractions |
| 26 | 76.5 | 26 | Division of decimals |
| 26 | 76.5 | 26 | Decimal equivalents |
| 28 | 75.8 | 25 | Reducing fractions to lowest terms |
| 29.5 | 73.5 | 25 | Multiplication, mixed numbers |
| 29.5 | 73.5 | 25 | Changing decimals to common fractions |
| 31.5 | 72.7 | 24 | Liquid measure |
| 31.5 | 72.7 | 24 | Reducing mixed numbers to simplest form |
| 33.5 | 70.6 | 24 | Division, fractions |
| 33.5 | 70.6 | 24 | Division, mixed numbers |
| 35 | 69.7 | 23 | Area of square |
| 36.5 | 67.6 | 23 | Improper fractions, mixed numbers |
| 36.5 | 67.6 | 23 | Comparing fractions |
| 38 | 66.7 | 22 | Area of rectangle |
| 40 | 64.7 | 22 | Changing per cents to common fractions |
| 40 | 64.7 | 22 | Finding what per cent one number is of another |
| 40 | 64.7 | 22 | Changing common fractions to per cents |
| 42.5 | 57.6 | 19 | Volume of rectangular solid |
| 42.5 | 57.6 | 19 | Measuring angles |
| 44.5 | 55.9 | 19 | Finding a number when a per cent of it is known |
| 44.5 | 55.9 | 19 | Finding what part one number is of another |
| 47.5 | 54.5 | 18 | Volume of cube |
| 47.5 | 54.5 | 18 | Ratio and proportion |
| 47.5 | 54.5 | 18 | Area of circle |
| 47.5 | 54.5 | 18 | Finding a number when a fractional part of it is known |
| 50 | 46.9 | 15 | Volume of cylinder |
| 51.5 | 45.5 | 15 | Area of triangle |
| 51.5 | 45.5 | 15 | Area of circle using $A = \pi r^2$ |
| 53 | 45.2 | 14 | Finding length of unknown side of right triangle |
| 55 | 42.4 | 14 | Using pi $\pi$ |
| 55 | 42.4 | 14 | Circumference using $C = \pi d = 2\pi r$ |
| 55 | 42.4 | 14 | Squaring a number |
| 57 | 40.6 | 13 | Acute and obtuse angles |
| 58 | 34.4 | 11 | Micrometer reading |
| 59 | 34.2 | 11 | Temperature conversion |
| 60 | 31.3 | 10 | Simple algebraic equation with one unknown |
| 61 | 30.3 | 10 | Square root |
| 62 | 27.3 | 9 | Area of parallelogram |
| 64.5 | 24.2 | 8 | Volume of pyramid |
| 64.5 | 24.2 | 8 | Volume of cone |
| 64.5 | 24.2 | 8 | Volume of sphere |
| 64.5 | 24.2 | 8 | Area of trapezoid |

TABLE 42

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING T & I OTHERS STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 93.3 | 28 | Area of triangle |
| 2 | 93.1 | 27 | Area of circle using $A = \pi r^2$ |
| 3.5 | 89.3 | 28 | Using pi $\pi$ |
| 3.5 | 89.3 | 25 | Circumference using $C = \pi d = 2\pi r$ |
| 5 | 87.1 | 27 | Area of circle |
| 7 | 86.7 | 26 | Temperature conversion |
| 7 | 86.7 | 26 | Volume of cylinder |
| 7 | 86.7 | 26 | Volume of sphere |
| 9.5 | 86.2 | 25 | Volume of cone |
| 9.5 | 86.2 | 25 | Area of trapezoid |
| 11 | 85.2 | 23 | Square root |
| 12 | 84.4 | 27 | Changing decimals to common fractions |
| 13.5 | 83.3 | 25 | Volume of pyramid |
| 13.5 | 83.3 | 25 | Finding length of unknown side of right triangle |
| 15.5 | 82.4 | 28 | Changing common fractions to decimals |
| 15.5 | 82.4 | 28 | Reducing fractions to lowest terms |
| 18 | 80.6 | 25 | Finding what per cent one number is of another |
| 18 | 80.6 | 25 | Finding a number when a per cent of it is known |
| 18 | 80.6 | 25 | Finding a number when a fractional part of it is known |
| 21 | 80 | 24 | Finding what part one number is of another |
| 21 | 80 | 24 | Volume of rectangular solid |
| 21 | 80 | 24 | Area of parallelogram |
| 23 | 78.1 | 25 | Measuring angles |
| 25 | 76.7 | 23 | Ratio and proportion |
| 25 | 76.7 | 23 | Volume of cube |
| 25 | 76.7 | 23 | Acute and obtuse angles |
| 29.5 | 76.5 | 26 | Division, mixed numbers |
| 29.5 | 76.5 | 26 | Comparing fractions |
| 29.5 | 76.5 | 26 | Improper fractions, mixed numbers |
| 29.5 | 76.5 | 26 | Reducing mixed numbers to simplest form |
| 29.5 | 76.5 | 26 | Addition, mixed numbers |
| 29.5 | 76.5 | 26 | Subtraction, mixed numbers |
| 33 | 75.8 | 25 | Meaning of percentage |
| 34.5 | 75 | 21 | Micrometer reading |
| 34.5 | 75 | 24 | Decimal equivalents |
| 36.5 | 74.2 | 23 | Changing per cents to common fractions |
| 36.5 | 74.2 | 23 | Division of decimals |
| 39 | 73.5 | 25 | Addition, fractions |
| 39 | 73.5 | 25 | Division, fractions |
| 39 | 73.5 | 25 | Multiplication, mixed numbers |
| 41 | 71.9 | 23 | Finding per cent of a number |
| 42.5 | 71 | 22 | Changing per cent to decimals |
| 42.5 | 71 | 22 | Changing common fractions to per cents |
| 44.5 | 70.6 | 24 | Subtraction, fractions |
| 44.5 | 70.6 | 24 | Multiplication, fractions |
| 46 | 69 | 20 | Simple algebraic equation with one unknown |
| 47.5 | 67.6 | 23 | Averages |
| 47.5 | 67.6 | 23 | Reading, writing decimals |
| 49 | 66.7 | 20 | Changing decimals to per cents |
| 50 | 65.6 | 21 | Reading a rule |
| 52.5 | 64.5 | 20 | Area of square |
| 52.5 | 64.5 | 20 | Multiplication of decimals |
| 53 | 64.7 | 22 | Rounding off decimals |
| 54 | 63.3 | 19 | Area of rectangle |
| 55 | 60.6 | 20 | Liquid measure |
| 56.5 | 59.4 | 19 | Subtraction of decimals |
| 56.5 | 59.4 | 19 | Dividing whole numbers and decimals by 10,100,etc. |
| 58 | 58.8 | 20 | Division, whole numbers |
| 59 | 56.3 | 18 | Addition of decimals |
| 60 | 55.2 | 16 | Squaring a number |
| 61 | 51.5 | 17 | Multiplying whole numbers and decimals by 10,100,etc. |
| 62 | 42.4 | 14 | Rounding numbers |
| 63 | 41.2 | 14 | Multiplication, whole numbers |
| 64 | 27.3 | 9 | Reading large numbers |
| 65 | 26.5 | 9 | Subtraction, whole numbers |
| 66 | 23.5 | 8 | Addition, whole numbers |

TABLE 43

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF WELDING TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 2 | 100 | 39 | Subtraction, fractions |
| 2 | 100 | 39 | Addition, fractions |
| 2 | 100 | 39 | Reading a rule |
| 4 | 97.4 | 37 | Reducing fractions to lowest terms |
| 5 | 97.3 | 36 | Measuring angles |
| 6 | 94.9 | 37 | Subtraction, whole numbers |
| 8 | 94.9 | 37 | Multiplication, fractions |
| 8 | 94.9 | 37 | Division, fractions |
| 8 | 94.9 | 37 | Addition, whole numbers |
| 10 | 94.6 | 35 | Addition, mixed numbers |
| 11.5 | 92.3 | 36 | Division, whole numbers |
| 11.5 | 92.3 | 36 | Multiplication, whole numbers |
| 13 | 91.9 | 34 | Subtraction, mixed numbers |
| 14.5 | 86.8 | 33 | Reducing mixed numbers ti simplest form |
| 14.5 | 86.8 | 33 | Reading, writing decimals |
| 16.5 | 86.5 | 32 | Multiplication, mixed numbers |
| 16.5 | 86.5 | 32 | Division, mixed numbers |
| 18 | 84.6 | 33 | Changing decimals to common fractions |
| 19 | 81.6 | 31 | Improper fractions, mixed numbers |
| 20.5 | 81.1 | 30 | Comparing fractions |
| 20.5 | 81.1 | 30 | Circumference using $C = \pi d = 2\pi r$ |
| 22 | 79.5 | 31 | Decimal equivalents |
| 25 | 78.9 | 30 | Meaning of percentage |
| 25 | 78.9 | 30 | Changing common fractions to decimals |
| 25 | 78.9 | 30 | Multiplication of decimals |
| 25 | 78.9 | 30 | Division of decimals |
| 25 | 78.9 | 30 | Using pi $\pi$ |
| 28 | 18.4 | 29 | Finding length of unknown side of right triangle |
| 30 | 76.3 | 29 | Subtraction of decimals |
| 30 | 76.3 | 29 | Addition of decimals |
| 30 | 76.3 | 29 | Area of square |
| 32.5 | 75.7 | 28 | Rounding off decimals |
| 32.5 | 75.7 | 28 | Area of rectangle |
| 34 | 75 | 27 | Dividing whole numbers and decimals by 10, 100, etc. |
| 35.5 | 73 | 27 | Area of circle using $A = \pi r\ 2$ |
| 35.5 | 73 | 27 | Rounding numbers |
| 37 | 72.2 | 26 | Multiplying whole numbers and decimals by 10,100,etc. |
| 38 | 71.1 | 27 | Area of circle |
| 39 | 70.3 | 26 | Acute and obtuse angles |
| 40 | 69.4 | 25 | Averages |
| 41 | 64.9 | 24 | Reading large numbers |
| 42 | 59.5 | 22 | Squaring a number |
| 44.5 | 56.8 | 21 | Area of parallelogram |
| 44.5 | 56.8 | 21 | Simple algebraic equation with one unknown |
| 44.5 | 56.8 | 21 | Changing per cents to common fractions |
| 44.5 | 56.8 | 21 | Changing decimals to per cents |
| 47 | 55.6 | 20 | Square root |
| 49 | 54.1 | 20 | Area of triangle |
| 49 | 54.1 | 20 | Finding per cent of a number |
| 49 | 54.1 | 20 | Changing per cent to decimals |
| 51 | 52.8 | 19 | Changing common fractions to per cents |
| 52.5 | 48.6 | 18 | Finding a number when a fractional part of it is known |
| 52.5 | 48.6 | 18 | Area of trapezoid |
| 54 | 47.2 | 17 | Temperature conversion |
| 56.5 | 45.9 | 17 | Volume of cylinder |
| 56.5 | 45.9 | 17 | Volume of cube |
| 56.5 | 45.9 | 17 | Volume of rectangular solid |
| 56.5 | 45.9 | 17 | Finding what part one number is of another |
| 59 | 43.2 | 16 | Finding what per cent one number is of another |
| 60 | 41.7 | 15 | Ratio and proportion |
| 61 | 40.5 | 15 | Finding a number when a per cent of it is known |
| 62 | 35.1 | 13 | Micrometer reading |
| 63 | 33.3 | 12 | Volume of cone |
| 64.5 | 30.6 | 11 | Volume of pyramid |
| 64.5 | 30.6 | 11 | Volume of sphere |
| 66 | 22.2 | 8 | Liquid measure |

TABLE 44

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING WELDING STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 85.3 | 29 | Simple algebraic equation with one unknown |
| 2 | 81.3 | 26 | Ratio and proportion |
| 3 | 80.6 | 29 | Finding length of unknown side of right triangle |
| 4 | 79.5 | 31 | Division, fractions |
| 5 | 78.1 | 25 | Volume of cone |
| 6 | 77.1 | 27 | Reducing mixed numbers to simplest form |
| 7 | 76.5 | 26 | Acute and obtuse angles |
| 9 | 77.4 | 24 | Square root |
| 9 | 77.4 | 24 | Volume of pyramid |
| 9 | 76.4 | 29 | Multiplication, fractions |
| 12 | 75.8 | 25 | Volume of rectangular solid |
| 12 | 75.8 | 25 | Volume of cube |
| 12 | 75.8 | 25 | Volume of cylinder |
| 14 | 75.7 | 28 | Changing common fractions to decimals |
| 15.5 | 75 | 24 | Area of trapezoid |
| 15.5 | 75 | 24 | Micrometer reading |
| 17.5 | 74.3 | 26 | Circumference using $C = \pi d = 2 \pi r$ |
| 17.5 | 74.3 | 26 | Area of circle using $A = \pi r 2$ |
| 19 | 74.2 | 23 | Volume of sphere |
| 20 | 73.5 | 25 | Decimal equivalents |
| 21 | 73 | 27 | Improper fractions, mixed numbers |
| 22.5 | 72.7 | 24 | Meaning of percentage |
| 22.5 | 72.7 | 24 | Temperature conversion |
| 24.5 | 72.2 | 26 | Division, mixed numbers |
| 24.5 | 72.2 | 26 | Measuring angles |
| 26 | 71.4 | 25 | Division of decimals |
| 28 | 71 | 22 | Changing per cent to decimals |
| 28 | 71 | 22 | Changing decimals to per cents |
| 28 | 71 | 22 | Area of parallelogram |
| 30 | 70 | 21 | Finding per cent of a number |
| 32 | 69.4 | 25 | Using pi $\pi$ |
| 32 | 69.4 | 25 | Changing decimals to common fractions |
| 32 | 69.4 | 25 | Multiplication, mixed numbers |
| 34 | 69.2 | 27 | Subtraction, fractions |
| 35 | 68.8 | 22 | Area of triangle |
| 36 | 68.4 | 26 | Reducing fractions to lowest terms |
| 39.5 | 66.7 | 20 | Finding what per cent one number is of another |
| 39.5 | 66.7 | 20 | Finding a number when a per cent of it is known |
| 39.5 | 66.7 | 20 | Finding what per cent one number is of another |
| 39.5 | 66.7 | 24 | Comparing fractions |
| 39.5 | 66.7 | 20 | Changing common fractions to per cents |
| 39.5 | 66.7 | 24 | Area of circle |
| 43 | 63.3 | 19 | Finding a number when a fractional part of it is known |
| 44 | 62.9 | 22 | Multiplication of decimals |
| 45 | 61.5 | 24 | Addition, fractions |
| 46 | 61.3 | 19 | Changing per cents to common fractions |
| 47.5 | 61.1 | 22 | Addition, mixed numbers |
| 47.5 | 61.1 | 22 | Subtraction, mixed numbers |
| 49 | 60.6 | 20 | Liquid measure |
| 51 | 59.5 | 22 | Reading, writing decimals |
| 51 | 59.5 | 22 | Rounding off decimals |
| 51 | 59.5 | 22 | Reading a rule |
| 53 | 56.3 | 18 | Squaring a number |
| 54 | 52.9 | 18 | Area of rectangle |
| 56 | 51.4 | 18 | Averages |
| 56 | 51.4 | 18 | Area of square |
| 56 | 51.4 | 18 | Subtraction of decimals |
| 58 | 50 | 18 | Addition of decimals |
| 59 | 43.8 | 14 | Dividing whole numbers and decimals by 10,100,etc. |
| 60 | 40.5 | 15 | Division, whole numbers |
| 61 | 37.5 | 12 | Multiplying whole numbers and decimals by 10,100,etc. |
| 62 | 36.1 | 13 | Rounding numbers |
| 63 | 29.2 | 11 | Multiplication, whole numbers |
| 64 | 18.9 | 7 | Addition, whole numbers |
| 65 | 17.1 | 6 | Reading large numbers |
| 66 | 16.2 | 6 | Subtraction, whole numbers |

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TABLE 45

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF WOODWORKING TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 4.5 | 100 | 18 | Addition, whole numbers |
| 4.5 | 100 | 18 | Subtraction, whole numbers |
| 4.5 | 100 | 18 | Multiplication, whole numbers |
| 4.5 | 100 | 18 | Division, whole numbers |
| 4.5 | 100 | 18 | Reducing fractions to lowest terms |
| 4.5 | 100 | 18 | Addition, fractions |
| 4.5 | 100 | 18 | Subtraction, fractions |
| 4.5 | 100 | 17 | Measuring angles |
| 11 | 94.4 | 17 | Division, fractions |
| 11 | 94.4 | 17 | Addition, mixed numbers |
| 11 | 94.4 | 17 | Subtraction, mixed numbers |
| 11 | 94.4 | 17 | Reading a rule |
| 11 | 94.4 | 17 | Reading, writing decimals |
| 15 | 94.1 | 16 | Area of rectangle |
| 15 | 94.1 | 16 | Area of square |
| 15 | 94.1 | 16 | Rounding off decimals |
| 19 | 88.9 | 16 | Reducing mixed numbers to simplest form |
| 19 | 88.9 | 16 | Changing decimals to common fractions |
| 19 | 88.9 | 16 | Changing common fractions to decimals |
| 19 | 88.9 | 16 | Multiplication, fractions |
| 19 | 88.9 | 16 | Division, mixed numbers |
| 22.5 | 88.2 | 15 | Area of triangle |
| 22.5 | 88.2 | 15 | Rounding numbers |
| 25 | 83.3 | 15 | Multiplication, mixed numbers |
| 25 | 83.3 | 15 | Improper fractions, mixed numbers |
| 25 | 83.3 | 15 | Acute and obtuse angles |
| 27 | 82.4 | 14 | Reading large numbers |
| 29 | 76.5 | 13 | Finding length of unknown side of right triangle |
| 29 | 76.5 | 13 | Area of circle |
| 29 | 76.5 | 13 | Comparing fractions |
| 32 | 72.2 | 13 | Decimal equivalents |
| 32 | 72.2 | 13 | Addition of decimals |
| 32 | 72.2 | 13 | Subtraction of decimals |
| 34 | 70.6 | 12 | Averages |
| 37 | 66.7 | 12 | Multiplication of decimals |
| 37 | 66.7 | 12 | Division of decimals |
| 37 | 66.7 | 12 | Square root |
| 37 | 66.7 | 12 | Circumference using $C = \pi d = 2\pi r$ |
| 37 | 66.7 | 12 | Area of circle using $A = \pi r^2$ |
| 40 | 64.7 | 11 | Volume of cube |
| 41 | 61.6 | 11 | Using pi $\pi$ |
| 42 | 61.1 | 11 | Squaring a number |
| 43 | 58.8 | 10 | Volume of rectangular solid |
| 44.5 | 55.6 | 10 | Multiplying whole numbers and decimals by 10, 100, etc. |
| 44.5 | 55.6 | 10 | Dividing whole numbers and decimals by 10, 100, etc. |
| 46.5 | 52.9 | 9 | Ratio and proportion |
| 46.5 | 52.9 | 9 | Simple algebraic equation with one unknown |
| 48 | 50 | 9 | Meaning of percentage |
| 49.5 | 47.1 | 8 | Micrometer reading |
| 49.5 | 47.1 | 8 | Finding a number when a fractional part of it is known |
| 54 | 44.4 | 8 | Changing per cent to decimals |
| 54 | 44.4 | 8 | Changing decimals to per cents |
| 54 | 44.4 | 8 | Volume of cylinder |
| 54 | 44.4 | 8 | Area of trapezoid |
| 54 | 44.4 | 8 | Area of parallelogram |
| 54 | 44.4 | 8 | Finding per cent of a number |
| 54 | 44.4 | 8 | Finding what part one number is of another |
| 59.5 | 38.9 | 7 | Finding what per cent one number is of another |
| 59.5 | 38.9 | 7 | Finding a number when a per cent of it is known |
| 59.5 | 38.9 | 7 | Changing per cents to common fractions |
| 59.5 | 38.9 | 7 | Changing common fractions to per cents |
| 63.5 | 22.2 | 4 | Liquid measure |
| 63.5 | 22.2 | 4 | Volume of sphere |
| 63.5 | 22.2 | 4 | Volume of cone |
| 63.5 | 22.2 | 4 | Volume of pyramid |
| 66 | 5.6 | 1 | Temperature conversion |

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TABLE 46

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING WOODWORKING STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 94.4 | 17 | Changing decimals to common fractions |
| 2 | 94.1 | 16 | Division, fractions |
| 4 | 88.9 | 16 | Changing common fractions to decimals |
| 4 | 88.9 | 16 | Multiplication, mixed numbers |
| 4 | 88.9 | 16 | Division, mixed numbers |
| 6.5 | 88.2 | 15 | Volume of cube |
| 6.5 | 88.2 | 15 | Improper fractions, mixed numbers |
| 8.5 | 87.5 | 14 | Multiplication, fractions |
| 8.5 | 87.5 | 14 | Finding length of unknown side of right triangle |
| 10 | 86.7 | 13 | Micrometer reading |
| 11 | 83.3 | 15 | Comparing fractions |
| 15 | 81.3 | 13 | Changing per cents to common fractions |
| 15 | 81.3 | 13 | Changing common fractions to per cents |
| 15 | 81.3 | 13 | Finding per cent of a number |
| 15 | 81.3 | 13 | Finding what per cent one number is of another |
| 15 | 81.3 | 13 | Finding a number when a per cent of it is known |
| 15 | 81.3 | 13 | Finding what part one number is of another |
| 15 | 81.3 | 13 | Finding a number when a fractional part of it is known |
| 22.5 | 82.4 | 14 | Decimal equivalents |
| 22.5 | 82.4 | 14 | Using pi $\pi$ |
| 22.5 | 82.4 | 14 | Circumference using $C = \pi d = 2\pi r$ |
| 22.5 | 82.4 | 14 | Area of circle using $A = \pi r^2$ |
| 22.5 | 82.4 | 14 | Volume of rectangular solid |
| 22.5 | 82.4 | 14 | Measuring angles |
| 22.5 | 82.4 | 14 | Area of triangle |
| 22.5 | 82.4 | 14 | Area of trapezoid |
| 27 | 81.3 | 13 | Square root |
| 28.5 | 77.8 | 14 | Meaning of percentage |
| 28.5 | 77.8 | 14 | Reading a rule |
| 34.5 | 76.5 | 13 | Volume of cylinder |
| 34.5 | 76.5 | 13 | Volume of sphere |
| 34.5 | 76.5 | 13 | Volume of cone |
| 34.5 | 76.5 | 13 | Volume of pyramid |
| 34.5 | 76.5 | 13 | Simple algebraic equation with one unknown |
| 34.5 | 76.5 | 13 | Acute and obtuse angles |
| 34.5 | 76.5 | 13 | Reducing fractions to lowest terms |
| 34.5 | 76.5 | 13 | Addition, fractions |
| 34.5 | 76.5 | 13 | Subtraction, fractions |
| 34.5 | 76.5 | 13 | Area of parallelogram |
| 40.5 | 75 | 12 | Squaring a number |
| 40.5 | 75 | 12 | Ratio and proportion |
| 42.5 | 72.2 | 13 | Changing per cent to decimals |
| 42.5 | 72.2 | 13 | Changing decimals to per cents |
| 44.5 | 70.6 | 12 | Dividing whole numbers and decimals by 10,100,etc. |
| 44.5 | 70.6 | 12 | Reducing mixed numbers to simplest form |
| 46 | 68.8 | 11 | Temperature conversion |
| 47.5 | 66.7 | 12 | Area of rectangle |
| 47.5 | 66.7 | 12 | Averages |
| 50 | 64.7 | 11 | Liquid measure |
| 50 | 64.7 | 11 | Area of circle |
| 50 | 64.7 | 11 | Multiplying whole numbers and decimals by 10, 100,etc. |
| 52.5 | 61.1 | 11 | Area of square |
| 52.5 | 61.1 | 11 | Subtraction, mixed numbers |
| 54.5 | 58.8 | 10 | Division of decimals |
| 54.5 | 58.8 | 10 | Rounding off decimals |
| 57.5 | 55.6 | 10 | Rounding numbers |
| 57.5 | 55.6 | 10 | Reading, writing decimals |
| 57.5 | 55.6 | 10 | Multiplication of decimals |
| 57.5 | 55.6 | 10 | Addition, mixed numbers |
| 60.5 | 50 | 9 | Addition of decimals |
| 60.5 | 50 | 9 | Subtraction of decimals |
| 62 | 38.9 | 7 | Division, whole numbers |
| 63 | 33.3 | 6 | Reading large numbers |
| 64.5 | 27.8 | 5 | Multiplication, whole numbers |
| 64.5 | 27.8 | 5 | Addition, whole numbers |
| 66 | 22.2 | 4 | Subtraction, whole numbers |

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TABLE 47

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS OF TRADE AND INDUSTRIAL OCCUPATIONS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | SKILL |
|---|---|---|
| 1 | 98.5 | Addition, whole numbers |
| 2 | 97.5 | Subtraction, whole numbers |
| 3 | 96.3 | Multiplication, whole numbers |
| 4 | 95.2 | Division, whole numbers |
| 5 | 91.5 | Reading a rule |
| 6 | 88.7 | Addition, fractions |
| 7 | 87.5 | Subtraction, fractions |
| 8 | 87.2 | Reading, writing decimals |
| 9 | 85.1 | Addition, mixed numbers |
| 10 | 83.6 | Subtraction, mixed numbers |
| 11 | 83.4 | Reducing fractions to lowest terms |
| 12.5 | 81.4 | Rounding off decimals |
| 12.5 | 81.4 | Addition of decimals |
| 14 | 81.3 | Multiplication, fractions |
| 15 | 81.2 | Rounding numbers |
| 16.5 | 80.3 | Division, fractions |
| 16.5 | 80.3 | Subtraction of decimals |
| 18 | 80.2 | Changing common fractions to decimals |
| 19 | 78.5 | Meaning of percentage |
| 20 | 78.3 | Multiplication, mixed numbers |
| 21 | 76.7 | Division, mixed numbers |
| 22 | 77.3 | Reducing mixed numbers of simplest form |
| 23 | 76.4 | Decimal equivalents |
| 24 | 76.1 | Multiplication of decimals |
| 25 | 75.6 | Averages |
| 26 | 75.4 | Reading large numbers |
| 27 | 75 | Changing decimals to common fractions |
| 28 | 74.3 | Division of decimals |
| 29 | 73.2 | Improper fractions, mixed numbers |
| 30.5 | 72.6 | Measuring angles |
| 30.5 | 72.6 | Multiplying whole numbers and decimals by 10, 100, etc. |
| 32 | 71.5 | Dividing whole numbers and decimals by 10, 100, etc. |
| 33 | 71.2 | Comparing fractions |
| 34 | 69.8 | Ratio and proportion |
| 35 | 69.2 | Finding per cent of a number |
| 36 | 65.2 | Changing per cent to decimals |
| 37 | 64.4 | Changing decimals to per cents |
| 38 | 63.3 | Area of square |
| 39 | 61.4 | Using pi $\pi$ |
| 40 | 60.4 | Squaring a number |
| 41 | 60.3 | Area of rectangle |
| 42 | 59.7 | Area of circle |
| 43 | 58.4 | Finding what per cent one number is of another |
| 44 | 58 | Changing common fractions to per cents |
| 45 | 57.8 | Circumference using $C = \pi d = 2\pi r$ |
| 46 | 56.7 | Finding what part one number is of another |
| 47 | 56.5 | Area of circle using $A = \pi r^2$ |
| 48 | 55.8 | Micrometer reading |
| 49 | 55.5 | Changing per cents to common fractions |
| 50 | 55.3 | Finding length of unknown side of right triangle |
| 51 | 54.9 | Square root |
| 52 | 54.6 | Liquid measure |
| 53 | 53.7 | Finding a number when a fractional part of it is known |
| 54 | 52.9 | Acute and obtuse angles |
| 55 | 52.4 | Finding a number when a per cent of it is known |
| 56 | 52.2 | Simple algebraic equation with one unknown |
| 57 | 48.2 | Area of triangle |
| 58 | 45.7 | Volume of cylinder |
| 59 | 43 | Volume of cube |
| 60 | 42.5 | Area of parallelogram |
| 61 | 41.2 | Volume of rectangular solid |
| 62 | 39.6 | Temperature conversion |
| 63 | 33.7 | Area of trapezoid |
| 64 | 28.1 | Volume of sphere |
| 65 | 26.8 | Volume of cone |
| 66 | 26.6 | Volume of pyramid |

TABLE 48

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS OF TRADE AND INDUSTRIAL SUBJECTS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING STUDENT

| RANK | PERCENT | SKILL |
|---|---|---|
| 1 | 78.6 | Ratio and proportion |
| 2 | 78.2 | Finding length of unknown side of right triangle |
| 3 | 76.9 | Changing common fractions to decimals |
| 4 | 76.3 | Square root |
| 5 | 75.6 | Volume of cylinder |
| 6 | 75.3 | Measuring angles |
| 7.5 | 74.7 | Acute and obtuse angles |
| 7.5 | 74.7 | Simple algebraic equation with one unknown |
| 9 | 74.5 | Finding a number when a fractional part of it is known |
| 11.5 | 74.2 | Volume of cone |
| 11.5 | 74.2 | Volume of pyramid |
| 11.5 | 74.2 | Circumference using $C = \pi d = 2\pi r$ |
| 11.5 | 74.2 | Decimal equivalents |
| 14.5 | 74.1 | Changing decimals to common fractions |
| 14.5 | 74.1 | Area of circle using $A = \pi r^2$ |
| 16.5 | 74 | Division, fractions |
| 16.5 | 74 | Volume of sphere |
| 18 | 73.8 | Area of trapezoid |
| 19 | 73.6 | Finding what per cent one number is of another |
| 20 | 73.4 | Finding what part one number is of another |
| 21 | 72.8 | Micrometer reading |
| 22 | 72.7 | Finding a number when a per cent of it is known |
| 23 | 72.5 | Temperature conversion |
| 24 | 72.3 | Improper fractions, mixed numbers |
| 25 | 72 | Multiplication, fractions |
| 26 | 71.6 | Division, mixed numbers |
| 27 | 71.1 | Area of circle |
| 28 | 70.6 | Area of triangle |
| 29 | 70.5 | Comparing fractions |
| 30 | 70.4 | Volume of cube |
| 32 | 70.2 | Reducing mixed numbers to simplest form |
| 32 | 70.2 | Reducing fractions to lowest terms |
| 32 | 70.2 | Using pi $\pi$ |
| 34 | 70 | Changing decimals to per cents |
| 35.5 | 69.5 | Subtraction, fractions |
| 35.5 | 69.5 | Area of parallelogram |
| 37.5 | 69.3 | Changing per cents to common fractions |
| 37.5 | 69.3 | Volume of rectangular solid |
| 39 | 69.1 | Finding per cent of a number |
| 40 | 69 | Changing common fractions to per cents |
| 41 | 68.9 | Multiplication, mixed numbers |
| 42 | 67.5 | Changing per cent to decimals |
| 43 | 66.9 | Addition, fractions |
| 44.5 | 66.6 | Reading, writing decimals |
| 44.5 | 66.6 | Division of decimals |
| 46 | 65.5 | Meaning of percentage |
| 47 | 65.1 | Subtraction, mixed numbers |
| 48 | 63.9 | Addition, mixed numbers |
| 49 | 62.5 | Rounding off decimals |
| 50 | 60.5 | Multiplication of decimals |
| 51 | 61.8 | Reading a rule |
| 52.5 | 60.3 | Liquid measure |
| 52.5 | 60.3 | Squaring a number |
| 54 | 58.6 | Area of rectangle |
| 55 | 57 | Area of square |
| 56.5 | 56.8 | Averages |
| 56.5 | 56.8 | Dividing whole numbers and decimals by 10, 100, etc. |
| 58 | 52.7 | Multiplying whole numbers and decimals by 10, 100, etc. |
| 59 | 50.7 | Subtraction of decimals |
| 60 | 49.9 | Addition of decimals |
| 61 | 43.8 | Division, whole numbers |
| 62 | 41.5 | Rounding numbers |
| 63 | 36.5 | Multiplication, whole numbers |
| 64 | 33.9 | Reading large numbers |
| 65 | 27 | Subtraction, whole numbers |
| 66 | 25.8 | Addition, whole numbers |

TABLE 49

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF BUILDING TECHNOLOGY TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 19.5 | 100 | 14 | Decimal equivalents |
| 19.5 | 100 | 14 | Addition of decimals |
| 19.5 | 100 | 14 | Subtraction of decimals |
| 19.5 | 100 | 14 | Ratio and proportion |
| 19.5 | 100 | 14 | Measuring angles |
| 19.5 | 100 | 14 | Acute and obtuse angles |
| 19.5 | 100 | 14 | Finding length of unknown side of right triangle |
| 19.5 | 100 | 14 | Using pi $\pi$ |
| 19.5 | 100 | 14 | Circumference using $C = \pi d = 2\pi r$ |
| 19.5 | 100 | 14 | Area of circle using $A = \pi r^2$ |
| 19.5 | 100 | 14 | Area of rectangle |
| 19.5 | 100 | 14 | Area of square |
| 19.5 | 100 | 14 | Area of parallelogram |
| 19.5 | 100 | 14 | Area of triangle |
| 19.5 | 100 | 14 | Area of trapezoid |
| 19.5 | 100 | 14 | Area of circle |
| 19.5 | 100 | 14 | Volume of rectangular solid |
| 19.5 | 100 | 14 | Volume of cube |
| 19.5 | 100 | 14 | Volume of cylinder |
| 19.5 | 100 | 14 | Volume of sphere |
| 19.5 | 100 | 14 | Volume of cone |
| 19.5 | 100 | 14 | Volume of pyramid |
| 19.5 | 100 | 14 | Simple algebraic equation with one unknown |
| 19.5 | 100 | 14 | Reading large numbers |
| 19.5 | 100 | 14 | Rounding numbers |
| 19.5 | 100 | 14 | Addition, whole numbers |
| 19.5 | 100 | 14 | Subtraction, whole numbers |
| 19.5 | 100 | 14 | Multiplication, whole numbers |
| 19.5 | 100 | 14 | Division, whole numbers |
| 19.5 | 100 | 14 | Finding per cent of a number |
| 19.5 | 100 | 14 | Meaning of percentage |
| 19.5 | 100 | 14 | Squaring a number |
| 19.5 | 100 | 14 | Square root |
| 19.5 | 100 | 14 | Reading a rule |
| 19.5 | 100 | 14 | Addition, fractions |
| 19.5 | 100 | 14 | Subtraction, fractions |
| 19.5 | 100 | 14 | Multiplication, fractions |
| 19.5 | 100 | 14 | Division, fractions |
| 48 | 92.9 | 13 | Changing decimals to common fractions |
| 48 | 92.9 | 13 | Averages |
| 48 | 92.9 | 13 | Reducing fractions to lowest terms |
| 48 | 92.9 | 13 | Comparing fractions |
| 48 | 92.9 | 13 | Improper fractions, mixed numbers |
| 48 | 92.9 | 13 | Reducing mixed numbers to simplest form |
| 48 | 92.9 | 13 | Addition, mixed numbers |
| 48 | 92.9 | 13 | Subtraction, mixed numbers |
| 48 | 92.9 | 13 | Multiplication, mixed numbers |
| 48 | 92.9 | 13 | Division, mixed numbers |
| 48 | 92.9 | 13 | Reading, writing decimals |
| 48 | 92.9 | 13 | Rounding off decimals |
| 48 | 92.9 | 13 | Changing common fractions to decimals |
| 48 | 92.9 | 13 | Multiplication of decimals |
| 48 | 92.9 | 13 | Division of decimals |
| 48 | 92.9 | 13 | Finding what per cent one number is of another |
| 48 | 92.9 | 13 | Finding a number when a per cent of it is known |
| 48 | 92.9 | 13 | Finding what part one number is of another |
| 48 | 92.9 | 13 | Finding a number when a fractional part of it is known |
| 59.5 | 85.7 | 12 | Changing per cent to decimals |
| 59.5 | 85.7 | 12 | Changing decimals to per cents |
| 59.5 | 85.7 | 12 | Changing per cents to common fractions |
| 59.5 | 85.7 | 12 | Changing common fractions to per cents |
| 62.5 | 78.6 | 11 | Multiplying whole numbers and decimals by 10, 100, etc. |
| 62.5 | 78.6 | 11 | Dividing whole numbers and decimals by 10, 100, etc. |
| 64 | 64.3 | 9 | Liquid measure |
| 65 | 50 | 7 | Temperature conversion |
| 66 | 35.7 | 5 | Micrometer reading |

TABLE 50
RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING BUILDING TECHNOLOGY STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 85.7 | 12 | Finding a number when a per cent of it is known |
| 2 | 78.6 | 11 | Finding what per cent one number is of another |
| 3 | 76.9 | 10 | Finding length of unknown side of right triangle |
| 4 | 75 | 9 | Changing decimals to common fractions |
| 8.5 | 71.4 | 10 | Ratio and proportion |
| 8.5 | 71.4 | 10 | Volume of sphere |
| 8.5 | 71.4 | 10 | Volume of cone |
| 8.5 | 71.4 | 10 | Volume of pyramid |
| 8.5 | 71.4 | 10 | Finding what part one number is of another |
| 8.5 | 71.4 | 10 | Changing common fractions to per cents |
| 8.5 | 71.4 | 10 | Finding per cent of a number |
| 13.5 | 69.2 | 9 | Division, mixed numbers |
| 13.5 | 69.2 | 9 | Changing common fractions to decimals |
| 16 | 64.3 | 9 | Averages |
| 16 | 64.3 | 9 | Volume of cylinder |
| 16 | 64.3 | 9 | Finding a number when a fractional part of it is known |
| 19 | 61.5 | 8 | Rounding off decimals |
| 19 | 61.5 | 8 | Changing decimals to per cents |
| 19 | 61.5 | 8 | Micrometer reading |
| 25.5 | 57.1 | 8 | Division, fractions |
| 25.5 | 57.1 | 8 | Comparing fractions |
| 25.5 | 57.1 | 8 | Temperature conversion |
| 25.5 | 57.1 | 8 | Area of triangle |
| 25.5 | 57.1 | 8 | Area of trapezoid |
| 25.5 | 57.1 | 8 | Simple algebraic equation with one unknown |
| 25.5 | 57.1 | 8 | Circumference using $C=\pi d=2\pi r$ |
| 25.5 | 57.1 | 8 | Changing per cents to common fractions |
| 25.5 | 57.1 | 8 | Decimal equivalents |
| 25.5 | 57.1 | 8 | Meaning of percentage |
| 31.5 | 53.8 | 7 | Changing per cent to decimals |
| 31.5 | 53.8 | 7 | Multiplication, mixed numbers |
| 38 | 50 | 7 | Area of parallelogram |
| 38 | 50 | 7 | Multiplication, fractions |
| 38 | 50 | 7 | Reducing mixed numbers to simplest form |
| 38 | 50 | 7 | Reducing fractions to lowest terms |
| 38 | 50 | 7 | Volume of cube |
| 38 | 50 | 7 | Using pi $\pi$ |
| 38 | 50 | 7 | Area of circle using $A=\pi r2$ |
| 38 | 50 | 7 | Measuring angles |
| 38 | 50 | 7 | Acute and obtuse angles |
| 38 | 50 | 7 | Liquid measure |
| 38 | 50 | 7 | Area of circle |
| 44 | 46.2 | 6 | Reading, writing decimals |
| 46.5 | 42.9 | 6 | Volume of rectangular solid |
| 46.5 | 42.9 | 6 | Improper fractions, mixed numbers |
| 46.5 | 42.9 | 6 | Subtraction of decimals |
| 46.5 | 42.9 | 6 | Addition, fractions |
| 50 | 38.5 | 5 | Addition, mixed numbers |
| 50 | 38.5 | 5 | Subtraction, mixed numbers |
| 50 | 38.5 | 5 | Division of decimals |
| 53.5 | 35.7 | 5 | Squaring a number |
| 53.5 | 35.7 | 5 | Addition of decimals |
| 53.5 | 35.7 | 5 | Subtraction, fractions |
| 53.5 | 35.7 | 5 | Rounding numbers |
| 56 | 30.8 | 4 | Multiplication of decimals |
| 58.5 | 28.6 | 4 | Area of rectangle |
| 58.5 | 28.6 | 4 | Area of square |
| 58.5 | 28.6 | 4 | Reading a rule |
| 58.5 | 28.6 | 4 | Reading large numbers |
| 61.5 | 25 | 3 | Multiplying whole numbers and decimals by 10,100,etc. |
| 61.5 | 25 | 3 | Dividing whole numbers and decimals by 10,100,etc. |
| 63 | 21.4 | 3 | Subtraction, whole numbers |
| 65 | 14.3 | 2 | Multiplication, whole numbers |
| 65 | 14.3 | 2 | Division, whole numbers |
| 65 | 14.3 | 2 | Addition, whole numbers |

TABLE 51

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF CHEMICAL TECHNOLOGY TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 11 | 100 | 12 | Addition of decimals |
| 11 | 100 | 12 | Subtraction of decimals |
| 11 | 100 | 12 | Multiplication of decimals |
| 11 | 100 | 12 | Division of decimals |
| 11 | 100 | 12 | Multiplying whole numbers and decimals by 10, 100,etc. |
| 11 | 100 | 12 | Dividing whole numbers and decimals by 10, 100, etc. |
| 11 | 100 | 12 | Meaning of percentage |
| 11 | 100 | 12 | Changing per cent to decimals |
| 11 | 100 | 12 | Changing decimals to per cents |
| 11 | 100 | 12 | Liquid measure |
| 11 | 100 | 12 | Temperature conversion |
| 11 | 100 | 12 | Ratio and proportion |
| 11 | 100 | 12 | Addition, whole numbers |
| 11 | 100 | 12 | Subtraction, whole numbers |
| 11 | 100 | 12 | Multiplication, whole numbers |
| 11 | 100 | 12 | Division, whole numbers |
| 11 | 100 | 12 | Reading, writing decimals |
| 11 | 100 | 12 | Rounding off decimals |
| 11 | 100 | 12 | Finding what part one number is of another |
| 11 | 100 | 11 | Simple algebraic equation with one unknown |
| 11 | 100 | 12 | Finding per cent of a number |
| 24.5 | 91.7 | 11 | Changing common fractions to decimals |
| 24.5 | 91.7 | 11 | Reading large numbers |
| 24.5 | 91.7 | 11 | Rounding numbers |
| 24.5 | 91.7 | 11 | Finding what per cent one number is of another |
| 24.5 | 91.7 | 11 | Finding a number when a per cent of it is known |
| 24.5 | 91.7 | 11 | Reading a rule |
| 28 | 90 | 9 | Finding a number when a fractional part of it is known |
| 32 | 83.3 | 10 | Averages |
| 32 | 83.3 | 10 | Reducing fractions to lowest terms |
| 32 | 83.3 | 10 | Division, fractions |
| 32 | 83.3 | 10 | Comparing fractions |
| 32 | 83.3 | 10 | Changing common fractions to per cents |
| 32 | 83.3 | 10 | Squaring a number |
| 32 | 83.3 | 10 | Volume of cylinder |
| 42 | 75 | 9 | Improper fractions, mixed numbers |
| 42 | 75 | 9 | Reducing mixed numbers to simplest form |
| 42 | 75 | 9 | Addition, mixed numbers |
| 42 | 75 | 9 | Subtraction, mixed numbers |
| 42 | 75 | 9 | Multiplication, mixed numbers |
| 42 | 75 | 9 | Division, mixed numbers |
| 42 | 75 | 9 | Addition, fractions |
| 42 | 75 | 9 | Subtraction, fractions |
| 42 | 75 | 9 | Multiplication, fractions |
| 42 | 75 | 9 | Changing decimals to common fractions |
| 42 | 75 | 9 | Decimal equivalents |
| 42 | 75 | 9 | Square root |
| 42 | 75 | 9 | Changing per cents to common fractions |
| 49 | 66.7 | 8 | Using pi $\pi$ |
| 51 | 58.3 | 7 | Area of circle using $A = \pi r^2$ |
| 51 | 58.3 | 7 | Volume of rectangular solid |
| 51 | 58.3 | 7 | Volume of cube |
| 54 | 50 | 6 | Area of circle |
| 54 | 50 | 6 | Micrometer reading |
| 54 | 50 | 6 | Area of square |
| 57 | 41.7 | 5 | Circumference using $C = \pi d = 2\pi r$ |
| 57 | 41.7 | 5 | Area of rectangular |
| 57 | 41.7 | 5 | Area of triangle |
| 59 | 33.3 | 4 | Volume of sphere |
| 63 | 16.7 | 2 | Measuring angles |
| 63 | 16.7 | 2 | Acute and obtuse angles |
| 63 | 16.7 | 2 | Finding length of unknown side of right triangle |
| 63 | 16.7 | 2 | Volume of cone |
| 63 | 16.7 | 2 | Volume of pyramid |
| 63 | 16.7 | 2 | Area of trapezoid |
| 63 | 16.7 | 2 | Area of parallelogram |

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TABLE 52

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING CHEMICAL TECHNOLOGY STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 90 | 9 | Decimal equivalents |
| 3 | 83.3 | 10 | Simple algebraic equation with one unknown |
| 3 | 83.3 | 10 | Temperature conversion |
| 3 | 83.3 | 10 | Ratio and proportion |
| 5 | 81.8 | 9 | Finding a number when a fractional part of it is known |
| 6.5 | 80 | 8 | Volume of cylinder |
| 6.5 | 80 | 8 | Changing decimals to common fractions |
| 10 | 75 | 9 | Finding per cent of a number |
| 10 | 75 | 9 | Meaning of percentage |
| 10 | 75 | 9 | Changing per cent to decimals |
| 10 | 75 | 9 | Finding a number when a per cent of it is known |
| 10 | 75 | 9 | Finding what part one number is of another |
| 14.5 | 72.7 | 8 | Changing per cents to common fractions |
| 14.5 | 72.7 | 8 | Division, mixed numbers |
| 14.5 | 72.7 | 8 | Reducing mixed numbers to simplest form |
| 14.5 | 72.7 | 8 | Square root |
| 19 | 66.7 | 8 | Liquid measure |
| 19 | 66.7 | 8 | Finding what per cent one number is of another |
| 19 | 66.7 | 8 | Dividing whole numbers and decimals by 10,100,etc. |
| 19 | 66.7 | 8 | Changing common fractions to decimals |
| 19 | 66.7 | 8 | Changing decimals to per cents |
| 22.5 | 63.6 | 7 | Comparing fractions |
| 22.5 | 63.6 | 7 | Micrometer reading |
| 24.5 | 60 | 6 | Volume of rectangular solid |
| 24.5 | 60 | 6 | Volume of cube |
| 26.5 | 58.3 | 7 | Multiplying whole numbers and decimals by 10,100,etc. |
| 26.5 | 58.3 | 7 | Changing common fractions to per cents |
| 28 | 57.1 | 4 | Area of triangle |
| 31.5 | 54.5 | 6 | Addition, mixed numbers |
| 31.5 | 54.5 | 6 | Subtraction, mixed numbers |
| 31.5 | 54.5 | 6 | Multiplication, mixed numbers |
| 31.5 | 54.5 | 6 | Division of decimals |
| 31.5 | 54.5 | 6 | Reducing fractions to lowest terms |
| 31.5 | 54.5 | 6 | Improper fractions, mixed numbers |
| 35.5 | 50 | 6 | Reading, writing decimals |
| 35.5 | 50 | 6 | Rounding off decimals |
| 38 | 45.5 | 5 | Multiplication of decimals |
| 38 | 45.5 | 5 | Division, fractions |
| 38 | 45.5 | 5 | Reading a rule |
| 40 | 42.9 | 3 | Area of parallelogram |
| 42.5 | 37.5 | 3 | Measuring angles |
| 42.5 | 37.5 | 3 | Area of circle |
| 42.5 | 37.5 | 3 | Volume of sphere |
| 42.5 | 37.5 | 3 | Area of square |
| 46 | 36.4 | 4 | Addition, fractions |
| 46 | 36.4 | 4 | Subtraction, fractions |
| 46 | 36.4 | 4 | Multiplication, fractions |
| 50 | 33.3 | 2 | Area of trapezoid |
| 50 | 33.3 | 2 | Finding length of unknown side of right triangle |
| 50 | 33.3 | 3 | Using pi $\pi$ |
| 50 | 33.3 | 4 | Averages |
| 50 | 33.3 | 4 | Rounding numbers |
| 54 | 28.6 | 2 | Acute and obtuse angles |
| 54 | 28.6 | 2 | Volume of cone |
| 54 | 28.6 | 2 | Volume of pyramid |
| 56.5 | 27.3 | 3 | Squaring a number |
| 56.5 | 27.3 | 3 | Reading large numbers |
| 58 | 25 | 2 | Circumference using $C = \pi d = 2\pi r$ |
| 59.5 | 22.2 | 2 | Area of circle using $A = \pi r^2$ |
| 59.5 | 22.2 | 2 | Area of rectangle |
| 61 | 18.2 | 2 | Multiplication, whole numbers |
| 62 | 16.7 | 2 | Division, whole numbers |
| 63.5 | 8.3 | 1 | Addition, whole numbers |
| 63.5 | 8.3 | 1 | Subtraction, whole numbers |
| 65.5 | 0 | 0 | Addition of decimals |
| 65.5 | 0 | 0 | Subtraction of decimals |

TABLE 53

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF DRAFTING DESIGN TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 10.5 | 100 | 34 | Division, mixed numbers |
| 10.5 | 100 | 34 | Reading a rule |
| 10.5 | 100 | 34 | Area of circle |
| 10.5 | 100 | 34 | Measuring angles |
| 10.5 | 100 | 34 | Acute and obtuse angles |
| 10.5 | 100 | 34 | Using pi $\pi$ |
| 10.5 | 100 | 34 | Circumference using $C = \pi d = 2\pi r$ |
| 10.5 | 100 | 34 | Area of circle using $A = \pi r^2$ |
| 10.5 | 100 | 34 | Area of rectangle |
| 10.5 | 100 | 34 | Area of square |
| 10.5 | 100 | 34 | Addition, fractions |
| 10.5 | 100 | 34 | Subtraction, fractions |
| 10.5 | 100 | 34 | Multiplication, fractions |
| 10.5 | 100 | 34 | Division, fractions |
| 10.5 | 100 | 34 | Addition, whole numbers |
| 10.5 | 100 | 34 | Subtraction, whole numbers |
| 10.5 | 100 | 34 | Multiplication, whole numbers |
| 10.5 | 100 | 34 | Addition, mixed numbers |
| 10.5 | 100 | 34 | Subtraction, mixed numbers |
| 10.5 | 100 | 34 | Changing decimals to common fractions |
| 26.5 | 97.1 | 33 | Finding length of unknown side or right triangle |
| 26.5 | 97.1 | 33 | Simple algebraic equation with one unknown |
| 26.5 | 97.1 | 33 | Area of triangle |
| 26.5 | 97.1 | 33 | Improper fractions, mixed numbers |
| 26.5 | 97.1 | 33 | Decimal equivalents |
| 26.5 | 97.1 | 33 | Addition of decimals |
| 26.5 | 97.1 | 33 | Subtraction of decimals |
| 26.5 | 97.1 | 33 | Reducing fractions to lowest terms |
| 26.5 | 97.1 | 33 | Multiplication, mixed numbers |
| 26.5 | 97.1 | 33 | Reading, writing decimals |
| 26.5 | 97.1 | 33 | Division, whole numbers |
| 26.5 | 97.1 | 33 | Rounding numbers |
| 38.5 | 94.1 | 32 | Micrometer reading |
| 38.5 | 94.1 | 32 | Rounding off decimals |
| 38.5 | 94.1 | 32 | Changing common fractions to decimals |
| 38.5 | 94.1 | 32 | Volume of rectangular solid |
| 38.5 | 94.1 | 32 | Volume of cube |
| 38.5 | 94.1 | 32 | Volume of cylinder |
| 38.5 | 94.1 | 32 | Comparing fractions |
| 38.5 | 94.1 | 32 | Multiplication of decimals |
| 38.5 | 94.1 | 32 | Division of decimals |
| 38.5 | 94.1 | 32 | Squaring a number |
| 38.5 | 94.1 | 32 | Square root |
| 38.5 | 99.1 | 32 | Reducing mixed numbers to simplest form |
| 45 | 91.2 | 31 | Ratio and proportion |
| 46 | 90.9 | 30 | Area of trapezoid |
| 48 | 88.2 | 30 | Reading large numbers |
| 48 | 88.2 | 30 | Area of parallelogram |
| 48 | 88.2 | 30 | Dividing whole numbers and decimals by 10, 100, etc. |
| 50 | 87.9 | 29 | Multiplying whole numbers and decimals by 10, 100, etc. |
| 53 | 85.3 | 29 | Averages |
| 53 | 85.3 | 29 | Meaning of percentage |
| 53 | 85.3 | 29 | Volume of sphere |
| 53 | 85.3 | 29 | Volume of cone |
| 53 | 85.3 | 29 | Volume of pyramid |
| 56 | 82.4 | 28 | Finding what part one number is of another |
| 57 | 79.4 | 27 | Finding a number when a fractional part of it is known |
| 58 | 76.5 | 26 | Finding what per cent one numbers is of another |
| 59 | 75.8 | 25 | Changing decimals to per cents |
| 61 | 73.5 | 25 | Finding per cent of a number |
| 61 | 73.5 | 25 | Changing per cent to decimals |
| 61 | 73.5 | 25 | Changing per cents to common fractions |
| 63.5 | 70.6 | 24 | Changing common fractions to per cents |
| 63.5 | 70.6 | 24 | Finding a number when a per cent of it is known |
| 65 | 67.6 | 23 | Liquid measure |
| 66 | 58.8 | 20 | Temperature conversion |

TABLE 54

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING DRAFTING DESIGN STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 79.4 | 27 | Area of circle using $A = \pi r^2$ |
| 3 | 76.5 | 26 | Volume of cone |
| 3 | 76.5 | 26 | Volume of pyramid |
| 3 | 76.5 | 26 | Finding length of unknown side of right triangle |
| 5 | 75.8 | 25 | Temperature conversion |
| 8 | 73.5 | 25 | Circumference using $C = \pi d = 2\pi r$ |
| 8 | 73.5 | 25 | Micrometer reading |
| 8 | 73.5 | 25 | Volume of cylinder |
| 8 | 73.5 | 25 | Volume of sphere |
| 8 | 73.5 | 25 | Area of circle |
| 11 | 71.9 | 23 | Changing decimals to per cents |
| 13 | 70.6 | 24 | Area of parallelogram |
| 13 | 70.6 | 24 | Area of triangle |
| 13 | 70.6 | 24 | Area of trapezoid |
| 17.5 | 69.7 | 23 | Square root |
| 17.5 | 69.7 | 23 | Finding a number when a fractional part of it is known |
| 17.5 | 69.7 | 23 | Changing per cent to decimals |
| 17.5 | 69.7 | 23 | Changing decimals to common fractions |
| 17.5 | 69.7 | 23 | Changing per cents to common fractions |
| 17.5 | 69.7 | 23 | Changing common fractions to per cents |
| 22 | 67.6 | 23 | Volume of rectangular solid |
| 22 | 67.6 | 23 | Volume of cube |
| 22 | 67.6 | 23 | Changing common fractions to decimals |
| 24.5 | 66.7 | 22 | Finding a number when a per cent of it is known |
| 24.5 | 66.7 | 22 | Finding what part one number is of another |
| 26.5 | 64.7 | 22 | Reducing mixed numbers to simplest form |
| 26.5 | 64.7 | 22 | Division, mixed numbers |
| 28.5 | 62.5 | 20 | Decimal equivalents |
| 28.5 | 62.5 | 20 | Liquid measure |
| 32.5 | 61.8 | 21 | Ratio and proportion |
| 32.5 | 61.8 | 21 | Using pi $\pi$ |
| 32.5 | 61.8 | 21 | Simple algebraic equation with one unknown |
| 32.5 | 61.8 | 21 | Improper fractions, mixed numbers |
| 32.5 | 61.8 | 21 | Addition, mixed numbers |
| 32.5 | 61.8 | 21 | Subtraction, mixed numbers |
| 36 | 59.4 | 19 | Finding what per cent one number is of another |
| 39.5 | 58.8 | 20 | Multiplication, mixed numbers |
| 39.5 | 58.8 | 20 | Multiplication, fractions |
| 39.5 | 58.8 | 20 | Division, fractions |
| 39.5 | 58.8 | 20 | Comparing fractions |
| 39.5 | 58.8 | 20 | Area of rectangle |
| 39.5 | 58.8 | 20 | Area of square |
| 43 | 57.6 | 19 | Acute and obtuse angles |
| 44 | 56.3 | 18 | Finding per cent of a number |
| 45 | 55.9 | 19 | Measuring angles |
| 46.5 | 54.5 | 18 | Reducing fractions to lowest terms |
| 46.5 | 54.5 | 18 | Division of decimals |
| 48 | 51.5 | 17 | Subtraction, fractions |
| 49.5 | 50 | 17 | Reading, writing decimals |
| 49.5 | 50 | 17 | Rounding off decimals |
| 51 | 48.5 | 16 | Addition, fractions |
| 52 | 47.1 | 26 | Reading a rule |
| 53.5 | 45.5 | 15 | Meaning of percentage |
| 53.5 | 45.5 | 15 | Multiplication of decimals |
| 55 | 41.2 | 14 | Squaring a number |
| 56.5 | 39.4 | 13 | Subtraction of decimals |
| 56.5 | 39.4 | 13 | Averages |
| 58 | 36.4 | 12 | Addition of decimals |
| 59 | 34.4 | 11 | Multiplying whole numbers and decimals by 10,100,etc. |
| 60 | 33.3 | 11 | Dividing whole numbers and decimals by 10,100,etc. |
| 61.5 | 26.5 | 9 | Division, whole numbers |
| 61.5 | 26.5 | 9 | Rounding numbers |
| 63 | 23.5 | 8 | Multiplication, whole numbers |
| 64 | 15.2 | 5 | Reading large numbers |
| 65 | 11.8 | 4 | Subtraction, whole numbers |
| 66 | 8.8 | 3 | Addition, whole numbers |

TABLE 55

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF ELECTRONICS TECHNOLOGY TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 8.5 | 100 | 32 | Addition, whole numbers |
| 8.5 | 100 | 32 | Subtraction, whole numbers |
| 8.5 | 100 | 32 | Multiplication, whole numbers |
| 8.5 | 100 | 32 | Division, whole numbers |
| 8.5 | 100 | 32 | Addition of decimals |
| 8.5 | 100 | 32 | Subtraction of decimals |
| 8.5 | 100 | 32 | Multiplication of decimals |
| 8.5 | 100 | 32 | Division of decimals |
| 8.5 | 100 | 32 | Multiplying whole numbers and decimals by 10,100,etc. |
| 8.5 | 100 | 32 | Dividing whole numbers and decimals by 10,100,etc. |
| 8.5 | 100 | 32 | Meaning of percentage |
| 8.5 | 100 | 32 | Squaring a number |
| 8.5 | 100 | 32 | Square root |
| 8.5 | 100 | 32 | Using pi $\pi$ |
| 8.5 | 100 | 32 | Reading, writing decimals |
| 8.5 | 100 | 32 | Rounding off decimals |
| 18 | 96.9 | 31 | Changing common fractions to decimals |
| 18 | 96.9 | 31 | Ratio and proportion |
| 18 | 96.9 | 31 | Reading large numbers |
| 20.5 | 96.8 | 30 | Rounding numbers |
| 20.5 | 96.8 | 30 | Changing decimals to per cents |
| 23.5 | 93.8 | 30 | Averages |
| 23.5 | 93.8 | 30 | Decimal equivalents |
| 23.5 | 93.8 | 30 | Finding length of unknown side of right triangle |
| 23.5 | 93.8 | 30 | Simple algebraic equation with one unknown |
| 26.5 | 93.5 | 29 | Finding per cent of a number |
| 26.5 | 93.5 | 29 | Changing per cent to decimals |
| 28 | 90.6 | 29 | Reading a rule |
| 29 | 90.3 | 28 | Measuring angles |
| 30 | 87.5 | 28 | Finding what part one number is of another |
| 31 | 86.7 | 26 | Acute and obtuse angles |
| 32.5 | 83.9 | 26 | Finding what per cent one number is of another |
| 32.5 | 83.9 | 26 | Finding a number when a per cent of it is known |
| 36 | 84.4 | 27 | Reducing fractions to lowest terms |
| 36 | 84.4 | 27 | Addition, fractions |
| 36 | 84.4 | 27 | Subtraction, fractions |
| 36 | 84.4 | 27 | Multiplication, fractions |
| 36 | 84.4 | 27 | Division, fractions |
| 41 | 81.3 | 26 | Improper fraction, mixed numbers |
| 41 | 81.3 | 26 | Addition, mixed numbers |
| 41 | 81.3 | 26 | Subtraction, mixed numbers |
| 41 | 81.3 | 26 | Multiplication, mixed numbers |
| 41 | 81.3 | 26 | Division, mixed numbers |
| 44.5 | 78.1 | 25 | Changing decimals to common fractions |
| 44.5 | 78.1 | 25 | Reducing mixed numbers to simplest form |
| 47 | 77.4 | 24 | Changing per cents to common fractions |
| 47 | 77.4 | 24 | Changing common fractions to per cents |
| 47 | 77.4 | 24 | Finding a number when a fractional part of it is known |
| 49 | 75 | 24 | Comparing fractions |
| 50 | 67.7 | 21 | Circumference using $C=\pi d=2\pi r$ |
| 51.5 | 61.3 | 19 | Temperature conversion |
| 51.5 | 61.3 | 19 | Area of circle using $A=\pi r2$ |
| 53.5 | 50 | 15 | Area of circle |
| 53.5 | 50 | 16 | Micrometer reading |
| 55 | 51.6 | 16 | Area of rectangle |
| 56.5 | 48.4 | 15 | Area of square |
| 56.5 | 48.4 | 15 | Area of triangle |
| 58 | 45.2 | 14 | Area of trapezoid |
| 59 | 40 | 12 | Area of parallelogram |
| 60.5 | 26.7 | 8 | Volume of rectangular solid |
| 60.5 | 26.7 | 8 | Volume of cube |
| 62 | 20 | 6 | Volume of cylinder |
| 64 | 16.7 | 5 | Liquid measure |
| 64 | 16.7 | 5 | Volume of pyramid |
| 64 | 16.7 | 5 | Volume of sphere |
| 66 | 13.3 | 4 | Volume of cone |

TABLE 56

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING ELECTRONICS TECHNOLOGY STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 83.9 | 26 | Square root |
| 2 | 81.3 | 26 | Ratio and proportion |
| 3 | 80.8 | 21 | Area of triangle |
| 4 | 80 | 20 | Area of trapezoid |
| 5 | 77.4 | 24 | Finding length of unknown side of right triangle |
| 6.5 | 72.7 | 16 | Volume of cone |
| 6.5 | 72.7 | 16 | Volume of pyramid |
| 8 | 70.8 | 17 | Area of circle |
| 9 | 68.2 | 15 | Volume of sphere |
| 10.5 | 66.7 | 18 | Temperature conversion |
| 10.5 | 66.7 | 16 | Area of parallelogram |
| 12 | 65.2 | 15 | Volume of cylinder |
| 13 | 64.3 | 18 | Changing common fractions to per cents |
| 15 | 63.3 | 19 | Division, fractions |
| 15 | 63.3 | 19 | Comparing fractions |
| 15 | 63.3 | 19 | Measuring angles |
| 17 | 63 | 17 | Finding a number when a fractional part of it is known |
| 18.5 | 62.1 | 18 | Finding what per cent one number is of another |
| 18.5 | 62.1 | 18 | Micrometer reading |
| 20 | 60.7 | 17 | Changing per cents to common fractions |
| 21 | 60 | 18 | Dividing whole numbers and decimals by 10,100,etc. |
| 22 | 59.4 | 19 | Changing common fractions to decimals |
| 23.5 | 58.6 | 17 | Changing decimals to common fractions |
| 23.5 | 58.6 | 17 | Acute and obtuse angles |
| 25 | 58.1 | 18 | Division of decimals |
| 26.5 | 56.7 | 17 | Reducing mixed numbers to simplest form |
| 26.5 | 56.7 | 17 | Finding what part one number is of another |
| 28 | 56.5 | 13 | Volume of cube |
| 29 | 55.2 | 16 | Finding a number when a per cent of it is known |
| 30.5 | 53.3 | 16 | Meaning of percentage |
| 30.5 | 53.3 | 16 | Multiplication, fractions |
| 30.5 | 53.3 | 16 | Division, mixed numbers |
| 30.5 | 53.3 | 16 | Finding per cent of a number |
| 34 | 52.2 | 12 | Volume of rectangular solid |
| 35 | 51.6 | 16 | Reducing fractions to lowest terms |
| 39 | 50 | 15 | Decimal equivalents |
| 39 | 50 | 15 | Addition, fractions |
| 39 | 50 | 15 | Changing decimals to per cents |
| 39 | 50 | 15 | Improper fractions, mixed numbers |
| 39 | 50 | 16 | Simple algebraic equation with one unknown |
| 39 | 50 | 16 | Rounding off decimals |
| 39 | 50 | 15 | Multiplication, mixed numbers |
| 43 | 48.1 | 13 | Circumference using $C = \pi d = 2\pi r$ |
| 44 | 48 | 12 | Area of circle using $A = \pi r^2$ |
| 45.5 | 46.7 | 14 | Changing per cent to decimals |
| 45.5 | 46.7 | 14 | Subtraction, fractions |
| 47 | 46.2 | 12 | Area of rectangle |
| 48 | 45.2 | 14 | Using pi $\pi$ |
| 49 | 42.3 | 11 | Area of square |
| 50 | 45.2 | 14 | Multiplication of decimals |
| 51 | 43.8 | 14 | Reading, writing decimals |
| 52.2 | 43.3 | 13 | Addition, mixed numbers |
| 52.2 | 43.3 | 13 | Subtraction, mixed numbers |
| 54.5 | 41.9 | 13 | Rounding numbers |
| 54.5 | 41.9 | 13 | Multiplying whole numbers and decimals by 10,100,etc. |
| 56 | 38.1 | 8 | Liquid measure |
| 57 | 29 | 9 | Reading a rule |
| 58 | 22.6 | 7 | Averages |
| 59.5 | 19.4 | 6 | Addition of decimals |
| 59.5 | 19.4 | 6 | Squaring a number |
| 61 | 16.4 | 5 | Subtraction of decimals |
| 62.5 | 15.6 | 5 | Division, whole numbers |
| 62.5 | 15.6 | 5 | Reading large numbers |
| 64 | 9.4 | 3 | Multiplication, whole numbers |
| 65 | 6.3 | 2 | Addition, whole numbers |
| 66 | 3.1 | 1 | Subtraction, whole numbers |

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TABLE 57

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TECHNICAL OTHER TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1.5 | 98.3 | 58 | Subtraction, whole numbers |
| 1.5 | 98.3 | 58 | Addition, whole numbers |
| 3.5 | 96.6 | 57 | Division, whole numbers |
| 3.5 | 96.6 | 57 | Multiplication, whole numbers |
| 5 | 94.9 | 56 | Reading, writing decimals |
| 6 | 94.8 | 55 | Rounding off decimals |
| 7 | 93.1 | 54 | Reading a rule |
| 8 | 93 | 53 | Changing common fractions to decimals |
| 10.5 | 91.5 | 54 | Addition of decimals |
| 10.5 | 91.5 | 54 | Subtraction of decimals |
| 10.5 | 91.5 | 54 | Subtraction, fractions |
| 10.5 | 91.5 | 54 | Addition, fractions |
| 14.5 | 89.8 | 53 | Multiplication, fractions |
| 14.5 | 89.8 | 53 | Reducing fractions to lowest terms |
| 14.5 | 89.8 | 53 | Multiplication of decimals |
| 14.5 | 89.8 | 53 | Division, fractions |
| 17 | 89.7 | 52 | Rounding numbers |
| 18 | 88.1 | 52 | Decimal equivalents |
| 19 | 87.9 | 51 | Division of decimals |
| 20 | 87.7 | 50 | Dividing whole numbers and decimals by 10,100,etc. |
| 21 | 86.4 | 51 | Averages |
| 22 | 86.2 | 50 | Multiplying whole numbers and decimals by 10,100,etc. |
| 23 | 86.1 | 50 | Finding per cent of a number |
| 24.5 | 86 | 49 | Subtraction, mixed numbers |
| 24.5 | 86 | 49 | Addition, mixed numbers |
| 26 | 84.7 | 50 | Reading large numbers |
| 28.5 | 84.5 | 49 | Meaning of percentage |
| 28.5 | 84.5 | 49 | Reducing mixed numbers to simplest form |
| 28.5 | 84.5 | 49 | Comparing fractions |
| 28.5 | 84.5 | 49 | Ratio and proportion |
| 31.5 | 84.2 | 48 | Division, mixed numbers |
| 31.5 | 84.2 | 48 | Multiplication, mixed numbers |
| 33 | 83.1 | 49 | Changing decimals to common fractions |
| 34.5 | 82.8 | 48 | Changing per cent to decimals |
| 34.5 | 82.8 | 48 | Changing decimals to per cents |
| 36 | 82.5 | 47 | Simple algebraic equation with one unknown |
| 37 | 81 | 47 | Finding what per cent one number is of another |
| 38.5 | 79.3 | 46 | Improper fractions, mixed numbers |
| 38.5 | 79.3 | 46 | Using pi $\pi$ |
| 40 | 78 | 46 | Measuring angles |
| 41 | 77.6 | 45 | Changing common fractions to per cents |
| 42 | 75.9 | 44 | Changing per cents to common fractions |
| 44 | 74.6 | 44 | Area of square |
| 44 | 74.6 | 44 | Area of circle using $A = \pi r^2$ |
| 44 | 74.6 | 44 | Area of rectangle |
| 46.5 | 74.1 | 43 | Circumference using $C = \pi d = 2\pi r$ |
| 46.5 | 74.1 | 43 | Finding a number when a per cent of it is known |
| 48 | 73.2 | 41 | Finding a number when a fractional part of it is known |
| 49 | 72.9 | 43 | Area of circle |
| 50.5 | 71.4 | 40 | Squaring a number |
| 50.5 | 71.4 | 40 | Finding what part one number is of another |
| 52.5 | 66.7 | 38 | Liquid measure |
| 52.5 | 66.7 | 38 | Temperature conversion |
| 54.5 | 64.9 | 37 | Micrometer reading |
| 54.5 | 64.9 | 37 | Acute and obtuse angles |
| 56.5 | 62.5 | 35 | Volume of cylinder |
| 56.5 | 62.5 | 35 | Square root |
| 58 | 61.4 | 35 | Finding length of unknown side of right triangle |
| 59 | 58.2 | 32 | Volume of cube |
| 60 | 56.4 | 31 | Volume of rectangular solid |
| 61 | 55.2 | 32 | Area of parallelogram |
| 62.5 | 52.6 | 30 | Area of trapezoid |
| 62.5 | 52.6 | 30 | Area of triangle |
| 64 | 45.5 | 25 | Volume of sphere |
| 65 | 43.6 | 24 | Volume of cone |
| 66 | 40 | 22 | Volume of pyramid |

TABLE 58

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING TECHNICAL OTHER STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 90.4 | 47 | Square root |
| 2 | 83.7 | 41 | Temperature conversion |
| 3 | 82.7 | 43 | Ratio and proportion |
| 4 | 82 | 41 | Finding a number when a fractional part of it is known |
| 5 | 81.5 | 44 | Finding what per cent one number is of another |
| 6 | 80.8 | 42 | Area of circle using $A = \pi r^2$ |
| 7 | 80.4 | 41 | Micrometer reading |
| 8.5 | 79.2 | 42 | Finding a number when a per cent of it is known |
| 8.5 | 79.2 | 42 | Simple algebraic equation with one unknown |
| 10 | 78.4 | 40 | Finding what part one number is of another |
| 11.5 | 77.8 | 42 | Changing decimals to per cents |
| 11.5 | 77.8 | 35 | Volume of sphere |
| 13 | 76.9 | 40 | Changing per cents to common fractions |
| 14 | 76.6 | 36 | Volume of cylinder |
| 15 | 76 | 38 | Circumference using $C = \pi d = 2\pi r$ |
| 16 | 75.9 | 41 | Changing per cent to decimals |
| 17 | 75.6 | 34 | Volume of pyramid |
| 18 | 75 | 36 | Area of trapezoid |
| 19 | 74.5 | 41 | Changing common fractions to decimals |
| 20 | 73.6 | 39 | Changing common fractions to per cents |
| 21 | 73.3 | 33 | Volume of cone |
| 22 | 72.7 | 40 | Finding per cent of a number |
| 23.5 | 72.5 | 37 | Finding length of unknown side of right triangle |
| 23.5 | 72.5 | 37 | Area of circle |
| 25 | 72.2 | 39 | Changing decimals to common fractions |
| 26 | 71.4 | 35 | Acute and obtuse angles |
| 27 | 70.9 | 39 | Decimal equivalents |
| 28 | 70 | 35 | Area of parallelogram |
| 29 | 68.1 | 32 | Volume of cube |
| 30 | 67.3 | 35 | Using pi $\pi$ |
| 31.5 | 66 | 35 | Measuring angles |
| 31.5 | 66 | 31 | Volume of rectangular solid |
| 33 | 64.9 | 37 | Division, fractions |
| 34 | 64.6 | 31 | Area of triangle |
| 35 | 63.6 | 35 | Comparing fractions |
| 36.5 | 62.5 | 35 | Reducing mixed numbers to simplest form |
| 36.5 | 62.5 | 35 | Reading, writing decimals |
| 38 | 62.3 | 33 | Meaning of percentage |
| 39 | 61.8 | 34 | Improper fractions, mixed numbers |
| 40 | 61.5 | 32 | Squaring a number |
| 41.5 | 61.4 | 35 | Multiplication, fractions |
| 41.5 | 61.4 | 35 | Reducing fractions to lowest terms |
| 43 | 59.3 | 32 | Division of decimals |
| 44 | 58 | 29 | Liquid measure |
| 45 | 55.6 | 30 | Division, mixed numbers |
| 46 | 52.7 | 29 | Multiplication, mixed numbers |
| 47 | 52.6 | 30 | Subtraction, fractions |
| 48 | 50.9 | 29 | Addition, fractions |
| 49 | 50 | 28 | Rounding off decimals |
| 50 | 48.1 | 25 | Area of rectangle |
| 51 | 47.3 | 26 | Multiplication of decimals |
| 52 | 45.3 | 24 | Reading a rule |
| 53 | 43.6 | 24 | Subtraction, mixed numbers |
| 54 | 43.4 | 23 | Area of square |
| 55 | 41.8 | 23 | Addition, mixed numbers |
| 56.5 | 37.9 | 20 | Multiplying whole numbers and decimals by 10,100,etc. |
| 56.5 | 37.9 | 20 | Dividing whole numbers and decimals by 10,100,etc. |
| 58 | 35.7 | 20 | Averages |
| 59.5 | 27.3 | 15 | Addition of decimals |
| 59.5 | 27.3 | 15 | Subtraction of decimals |
| 61 | 26.3 | 15 | Division, whole numbers |
| 62 | 21.4 | 12 | Rounding numbers |
| 63 | 21.1 | 12 | Multiplication, whole numbers |
| 64 | 17.5 | 10 | Reading large numbers |
| 65.5 | 12.1 | 7 | Addition, whole numbers |
| 65.5 | 12.1 | 7 | Subtraction, whole numbers |

TABLE 59

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS OF TECHNICAL OCCUPATIONS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | SKILL |
|---|---|---|
| 1.5 | 99.5 | Addition, whole numbers |
| 1.5 | 99.5 | Subtraction, whole numbers |
| 3 | 98.4 | Multiplication, whole numbers |
| 4 | 97.8 | Division, whole numbers |
| 5 | 97.3 | Reading, writing decimals |
| 6.5 | 96.2 | Addition of decimals |
| 6.5 | 96.2 | Subtraction of decimals |
| 8 | 94.5 | Multiplication of decimals |
| 9 | 93.9 | Division of decimals |
| 10 | 93.4 | Rounding numbers |
| 11 | 92.9 | Changing common fractions to decimals |
| 12 | 92.6 | Rounding off decimals |
| 13.5 | 91.2 | Meaning of percentage |
| 13.5 | 91.2 | Decimal equivalents |
| 15 | 91.1 | Dividing whole numbers and decimals by 10, 100, etc. |
| 16 | 90.6 | Multiplying whole numbers and decimals by 10, 100, etc. |
| 17 | 90.2 | Reading large numbers |
| 19.5 | 89.1 | Addition, fractions |
| 19.5 | 89.1 | Subtraction, fractions |
| 19.5 | 89.1 | Division, fractions |
| 19.5 | 89.1 | Averages |
| 22 | 88.6 | Multiplication, fractions |
| 23 | 88.3 | Finding per cent of a number |
| 24 | 87.5 | Reducing fractions to lowest terms |
| 25 | 87.4 | Addition, mixed numbers |
| 26 | 87.3 | Simple algebraic equation with one unknown |
| 27 | 87.2 | Changing decimals to per cents |
| 28 | 86.8 | Subtraction, mixed numbers |
| 29 | 86.3 | Division, mixed numbers |
| 30 | 86.2 | Reading a rule |
| 31 | 86.1 | Changing per cent to decimals |
| 32.5 | 85.7 | Changing decimals to common fractions |
| 32.5 | 85.7 | Multiplication, mixed numbers |
| 34 | 85.5 | Squaring a number |
| 35 | 84.7 | Ratio and proportion |
| 36 | 83.6 | Comparing fractions |
| 37 | 82.8 | Finding what per cent one number is of another |
| 38 | 82.5 | Reducing mixed numbers to simplest form |
| 39 | 81.6 | Finding what part one number is of another |
| 40.5 | 81.4 | Using pi $\pi$ |
| 40.5 | 81.4 | Improper fractions, mixed numbers |
| 42 | 80.4 | Square root |
| 43 | 79.4 | Finding a number when a per cent of it is known |
| 44 | 78.9 | Finding a number when a fractional part of it is known |
| 45 | 78.3 | Changing common fractions to per cents |
| 46 | 76.7 | Changing per cents to common fractions |
| 47 | 74.7 | Measuring angles |
| 48 | 72.1 | Area of circle using $A = \pi r^2$ |
| 49 | 72 | Circumference using $C = \pi d = 2\pi r$ |
| 50.5 | 68.9 | Area of rectangle |
| 50.5 | 69.9 | Area of square |
| 52 | 69.2 | Area of circle |
| 53 | 68.7 | Finding length of unknown side of right triangle |
| 54 | 67.8 | Acute and obtuse angles |
| 55 | 60.8 | Area of triangle |
| 56 | 59.8 | Volume of cylinder |
| 57 | 58.4 | Volume of cube |
| 58 | 58 | Volume of rectangular solid |
| 59 | 56.4 | Temperature conversion |
| 60 | 55.6 | Area of trapezoid |
| 61 | 55.2 | Area of parallelogram |
| 62 | 54.4 | Micrometer reading |
| 63 | 53.3 | Liquid measure |
| 64 | 48.3 | Volume of sphere |
| 65 | 45.9 | Volume of cone |
| 66 | 44.4 | Volume of pyramid |

TABLE 60

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS OF TECHNICAL OCCUPATIONS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING STUDENT

| RANK | PERCENT | SKILL |
|---|---|---|
| 1 | 75.9 | Square root |
| 2 | 72.7 | Ratio and proportion |
| 3 | 71 | Temperature conversion |
| 4 | 70.8 | Micrometer reading |
| 5 | 70.1 | Finding a number when a fractional part of it is known |
| 6 | 69.4 | Volume of cylinder |
| 7 | 69.3 | Volume of pyramid |
| 8.5 | 68.4 | Area of trapezoid |
| 8.5 | 68.4 | Volume of sphere |
| 10 | 68.3 | Finding length of unknown side of right triangle |
| 11 | 68.2 | Finding a number when a per cent of it is known |
| 12 | 68 | Volume of cone |
| 13 | 67.8 | Finding what per cent one number is of another |
| 14 | 66.3 | Finding what part one number is of another |
| 15 | 66.1 | Changing per cents to common fractions |
| 16 | 65.9 | Changing common fractions to per cents |
| 17 | 65.5 | Changing decimals to per cents |
| 18 | 65.3 | Simple algebraic equation with one unknown |
| 19 | 64.6 | Area of triangle |
| 20 | 64.3 | Changing decimals to common fractions |
| 21 | 64.2 | Changing common fractions to decimals |
| 22 | 63.7 | Area of parallelogram |
| 23 | 63.2 | Area of circle using $A = \pi r^2$ |
| 24 | 62.8 | Changing per cent to decimals |
| 25 | 62.5 | Area of circle |
| 26 | 61.1 | Circumference using $C = \pi d = 2\pi r$ |
| 27 | 60.5 | Volume of cube |
| 28 | 60.1 | Finding per cent of a number |
| 29 | 58.8 | Decimal equivalents |
| 30 | 58.2 | Multiplication, fractions |
| 31.5 | 57.7 | Comparing fractions |
| 31.5 | 57.7 | Volume of rectangular solid |
| 33 | 57.3 | Division, fractions |
| 34 | 57.1 | Acute and obtuse angles |
| 35 | 56.9 | Measuring angles |
| 36 | 56.4 | Division, mixed numbers |
| 37 | 56.3 | Reducing mixed numbers to simplest form |
| 38 | 54.4 | Using pi $\pi$ |
| 39 | 53.8 | Improper fractions, mixed numbers |
| 40 | 53.5 | Meaning of percentage |
| 41.5 | 52.2 | Liquid measure |
| 41.5 | 52.2 | Reducing fractions to lowest terms |
| 43 | 51.7 | Division of decimals |
| 44 | 51.2 | Multiplication, mixed numbers |
| 45 | 48.3 | Reading, writing decimals |
| 46 | 46.2 | Subtraction, mixed numbers |
| 47 | 46.1 | Rounding off decimals |
| 48 | 45.8 | Subtraction, fractions |
| 49 | 45.7 | Addition, mixed numbers |
| 50 | 45.5 | Addition, fractions |
| 51 | 43.3 | Area of rectangle |
| 52 | 42.7 | Area of square |
| 53 | 42.2 | Multiplication of decimals |
| 54 | 40.9 | Squaring a number |
| 55 | 38.6 | Reading a rule |
| 56 | 37.1 | Dividing whole numbers and decimals by 10, 100, etc. |
| 57 | 36.3 | Averages |
| 58 | 33.5 | Multiplying whole numbers and decimals by 10, 100, etc. |
| 59 | 27.2 | Rounding numbers |
| 60 | 25.3 | Subtraction of decimals |
| 61 | 24.7 | Addition of decimals |
| 62 | 19.8 | Division, whole numbers |
| 63 | 17.2 | Reading large numbers |
| 64 | 16 | Multiplication, whole numbers |
| 65 | 9.8 | Subtraction, whole numbers |
| 66 | 9.3 | Addition, whole numbers |

TABLE 61

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF DENTAL OCCUPATION TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 3 | 100 | 9 | Liquid measure |
| 3 | 100 | 9 | Addition, whole numbers |
| 3 | 100 | 9 | Subtraction, whole numbers |
| 3 | 100 | 9 | Multiplication, whole numbers |
| 3 | 100 | 9 | Division, whole numbers |
| 7 | 75 | 6 | Reading, writing decimals |
| 7 | 75 | 6 | Rounding off decimals |
| 7 | 75 | 6 | Meaning of percentage |
| 10.5 | 62.5 | 5 | Temperature conversion |
| 10.5 | 62.5 | 5 | Multiplication of decimals |
| 10.5 | 62.5 | 5 | Addition of decimals |
| 10.5 | 62.5 | 5 | Multiplication, fractions |
| 17 | 50 | 4 | Division, fractions |
| 17 | 50 | 4 | Changing per cent to decimals |
| 17 | 50 | 4 | Changing decimals to per cents |
| 17 | 50 | 4 | Subtraction of decimals |
| 17 | 50 | 4 | Changing common fractions to decimals |
| 17 | 50 | 4 | Division of decimals |
| 17 | 50 | 4 | Ratio and proportion |
| 17 | 50 | 4 | Finding per cent of a number |
| 17 | 50 | 4 | Averages |
| 29.5 | 37.5 | 3 | Multiplying whole numbers and decimals by 10, 100, etc. |
| 29.5 | 37.5 | 3 | Dividing whole numbers and decimals by 10, 100, etc. |
| 29.5 | 37.5 | 3 | Decimal equivalents |
| 29.5 | 37.5 | 3 | Comparing fractions |
| 29.5 | 37.5 | 3 | Improper fractions, mixed numbers |
| 29.5 | 37.5 | 3 | Reducing mixed numbers to simplest form |
| 29.5 | 37.5 | 3 | Addition, mixed numbers |
| 29.5 | 37.5 | 3 | Subtraction, mixed numbers |
| 29.5 | 37.5 | 3 | Multiplication, mixed numbers |
| 29.5 | 37.5 | 3 | Division, mixed numbers |
| 29.5 | 37.5 | 3 | Addition, fractions |
| 29.5 | 37.5 | 3 | Subtraction, fractions |
| 29.5 | 37.5 | 3 | Changing common fractions to per cents |
| 29.5 | 37.5 | 3 | Reading large numbers |
| 29.5 | 37.5 | 3 | Rounding numbers |
| 29.5 | 37.5 | 3 | Reading a rule |
| 38.5 | 33.3 | 3 | Measuring angles |
| 38.5 | 33.3 | 3 | Acute and obtuse |
| 41.5 | 25 | 2 | Reducing fractions to lowest terms |
| 41.5 | 25 | 2 | Changing decimals to common fractions |
| 41.5 | 25 | 2 | Micrometer reading |
| 41.5 | 25 | 2 | Volume of cylinder |
| 51.5 | 12.5 | 1 | Area of square |
| 51.5 | 12.5 | 1 | Area of parallelogram |
| 51.5 | 12.5 | 1 | Area of triangle |
| 51.5 | 12.5 | 1 | Area of trapezoid |
| 51.5 | 12.5 | 1 | Area of circle |
| 51.5 | 12.5 | 1 | Volume of rectangular solid |
| 51.5 | 12.5 | 1 | Volume of cube |
| 51.5 | 12.5 | 1 | Volume of sphere |
| 51.5 | 12.5 | 1 | Volume of cone |
| 51.5 | 12.5 | 1 | Volume of pyramid |
| 51.5 | 12.5 | 1 | Simple algebraic equation with one unknown |
| 51.5 | 12.5 | 1 | Finding what per cent one number is of another |
| 51.5 | 12.5 | 1 | Finding a number when a per cent of it is known |
| 51.5 | 12.5 | 1 | Finding what part one number is of another |
| 51.5 | 12.5 | 1 | Finding a number when a fractional part of it is known |
| 51.5 | 12.5 | 1 | Changing per cents to common fractions |
| 63 | 0 | 0 | Finding length of unknown side of right triangle |
| 63 | 0 | 0 | Using pi $\pi$ |
| 63 | 0 | 0 | Circumference using $C = \pi d = 2\pi r$ |
| 63 | 0 | 0 | Area of circle using $A = \pi r^2$ |
| 63 | 0 | 0 | Area of rectangle |
| 63 | 0 | 0 | Squaring a number |
| 63 | 0 | 0 | Square root |

TABLE 62

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING DENTAL OCCUPATION STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1.5 | 71.4 | 5 | Meaning of percentage |
| 1.5 | 71.4 | 5 | Averages |
| 6 | 66.7 | 4 | Reducing fractions to lowest terms |
| 6 | 66.7 | 4 | Addition, fractions |
| 6 | 66.7 | 4 | Subtraction, fractions |
| 6 | 66.7 | 4 | Multiplication, fractions |
| 6 | 66.7 | 4 | Comparing fractions |
| 6 | 66.7 | 4 | Improper fractions, mixed numbers |
| 6 | 66.7 | 6 | Liquid measure |
| 12 | 57.1 | 4 | Decimal equivalents |
| 12 | 57.1 | 4 | Temperature conversion |
| 12 | 57.1 | 4 | Ratio and proportion |
| 12 | 57.1 | 4 | Reading, writing decimals |
| 12 | 57.1 | 4 | Rounding off decimals |
| 28 | 50 | 3 | Volume of sphere |
| 28 | 50 | 3 | Volume of cone |
| 28 | 50 | 3 | Volume of pyramid |
| 28 | 50 | 3 | Reducing mixed numbers to simplest form |
| 28 | 50 | 3 | Addition, mixed numbers |
| 28 | 50 | 3 | Subtraction, mixed numbers |
| 28 | 50 | 3 | Multiplication, mixed numbers |
| 28 | 50 | 3 | Division, mixed numbers |
| 28 | 50 | 3 | Micrometer reading |
| 28 | 50 | 3 | Division, fractions |
| 28 | 50 | 3 | Changing per cent to decimals |
| 28 | 50 | 3 | Changing decimals to per cents |
| 28 | 50 | 3 | Changing decimals to common fractions |
| 28 | 50 | 3 | Finding a number when a per cent of it is known |
| 28 | 50 | 3 | Finding what part one number is of another |
| 28 | 50 | 3 | Finding a number when a fractional part of it is known |
| 28 | 50 | 3 | Area of square |
| 28 | 50 | 3 | Area of parallelogram |
| 28 | 50 | 3 | Area of triangle |
| 28 | 50 | 3 | Area of trapezoid |
| 28 | 50 | 3 | Area of circle |
| 28 | 50 | 3 | Volume of rectangular solid |
| 28 | 50 | 3 | Volume of cube |
| 28 | 50 | 3 | Changing common fractions to decimals |
| 28 | 50 | 3 | Changing common fractions to per cents |
| 28 | 50 | 4 | Measuring angles |
| 28 | 50 | 4 | Acute and obtuse angles |
| 44 | 42.9 | 3 | Multiplying whole numbers and decimals by 10,100,etc |
| 44 | 42.9 | 3 | Dividing whole numbers and decimals by 10,100,etc. |
| 44 | 42.9 | 3 | Reading a rule |
| 44 | 42.9 | 3 | Finding per cent of a number |
| 44 | 42.9 | 3 | Volume of cylinder |
| 53.5 | 33.3 | 2 | Changing per cents to common fractions |
| 53.5 | 33.3 | 2 | Simple algebraic equation with one unknown |
| 53.5 | 33.3 | 2 | Finding what per cent one number is of another |
| 53.5 | 33.3 | 2 | Squaring a number |
| 53.5 | 33.3 | 2 | Square root |
| 53.5 | 33.3 | 2 | Finding length of unknown side of right triangle |
| 53.5 | 33.3 | 2 | Using pi $\pi$ |
| 53.5 | 33.3 | 2 | Circumference using $C = \pi d = 2\pi r$ |
| 53.5 | 33.3 | 2 | Area of circle using $A = \pi r^2$ |
| 53.5 | 33.3 | 2 | Area of rectangle |
| 53.5 | 33.3 | 3 | Addition, whole numbers |
| 53.5 | 33.3 | 3 | Subtraction, whole numbers |
| 53.5 | 33.3 | 3 | Multiplication, whole numbers |
| 53.5 | 33.3 | 3 | Division, whole numbers |
| 62.5 | 28.6 | 2 | Addition of decimals |
| 62.5 | 28.6 | 2 | Subtraction of decimals |
| 62.5 | 28.6 | 2 | Multiplication of decimals |
| 62.5 | 28.6 | 2 | Division of decimals |
| 65.5 | 14.3 | 1 | Reading large numbers |
| 65.5 | 14.3 | 1 | Rounding numbers |

TABLE 63

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF HEALTH ASSISTANT TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 100 | 20 | Liquid measure |
| 2.5 | 90 | 18 | Temperature conversion |
| 2.5 | 90 | 18 | Addition, whole numbers |
| 5 | 85 | 17 | Subtraction, whole numbers |
| 5 | 85 | 17 | Multiplication, whole numbers |
| 5 | 85 | 17 | Reading, writing decimals |
| 7 | 80 | 16 | Division, whole numbers |
| 8 | 75 | 15 | Averages |
| 9.5 | 70 | 14 | Meaning of percentage |
| 9.5 | 70 | 14 | Changing per cent to decimals |
| 12 | 65 | 13 | Comparing fractions |
| 12 | 65 | 13 | Changing common fractions to decimals |
| 12 | 65 | 13 | Addition, fractions |
| 16 | 60 | 12 | Subtraction, fractions |
| 16 | 60 | 12 | Multiplication, fractions |
| 16 | 60 | 12 | Changing decimals to per cents |
| 16 | 60 | 12 | Addition, mixed numbers |
| 16 | 60 | 12 | Subtraction, mixed numbers |
| 19.5 | 57.9 | 11 | Reducing fractions to lowest terms |
| 19.5 | 57.9 | 11 | Reading large numbers |
| 23.5 | 55 | 11 | Division, fractions |
| 23.5 | 55 | 11 | Changing decimals to common fractions |
| 23.5 | 55 | 11 | Decimal equivalents |
| 23.5 | 55 | 11 | Multiplication, mixed numbers |
| 23.5 | 55 | 11 | Rounding numbers |
| 23.5 | 55 | 11 | Improper fractions, mixed numbers |
| 28 | 50 | 10 | Rounding off decimals |
| 28 | 50 | 10 | Finding per cent of a number |
| 28 | 50 | 10 | Division, mixed numbers |
| 30 | 47.4 | 9 | Reducing mixed numbers to simplest form |
| 32.5 | 45 | 9 | Addition of decimals |
| 32.5 | 45 | 9 | Subtraction of decimals |
| 32.5 | 45 | 9 | Multiplication of decimals |
| 32.5 | 45 | 9 | Changing common fractions to per cents |
| 35 | 44.4 | 8 | Ratio and proportion |
| 37.5 | 42.1 | 8 | Multiplying whole numbers and decimals by 10,100,etc. |
| 37.5 | 42.1 | 8 | Dividing whole numbers and decimals by 10,100,etc. |
| 37.5 | 42.1 | 8 | Finding what per cent one number is of another |
| 37.5 | 42.1 | 8 | Reading a rule |
| 40.5 | 40 | 8 | Division of decimals |
| 40.5 | 40 | 8 | Changing per cents to common fractions |
| 42 | 36.8 | 7 | Simple algebraic equation with one unknown |
| 43 | 30 | 6 | Finding what part one number is of another |
| 44 | 27.8 | 5 | Finding a number when a per cent of it is known |
| 45 | 26.3 | 5 | Finding a number when a fractional part of it is known |
| 47.5 | 5.3 | 1 | Micrometer reading |
| 47.5 | 5.3 | 1 | Area of circle |
| 47.5 | 5.3 | 1 | Area of triangle |
| 47.5 | 5.3 | 1 | Squaring a number |
| 58 | 0 | 0 | Measuring angles |
| 58 | 0 | 0 | Acute and obtuse angles |
| 58 | 0 | 0 | Finding length of unknown side of right triangle |
| 58 | 0 | 0 | Using pi $\pi$ |
| 58 | 0 | 0 | Circumference using $C=\pi d=2\pi r$ |
| 58 | 0 | 0 | Area of circle using $A=\pi r2$ |
| 58 | 0 | 0 | Area of rectangle |
| 58 | 0 | 0 | Area of square |
| 58 | 0 | 0 | Area of parallelogram |
| 58 | 0 | 0 | Volume of rectangular solid |
| 58 | 0 | 0 | Volume of cube |
| 58 | 0 | 0 | Volume of cylinder |
| 58 | 0 | 0 | Volume of sphere |
| 58 | 0 | 0 | Volume of cone |
| 58 | 0 | 0 | Volume of pyramid |
| 58 | 0 | 0 | Square root |
| 58 | 0 | 0 | Area of trapezoid |

TABLE 64

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING HEALTH ASSISTANT STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 89.5 | 17 | Temperature conversion |
| 2 | 77.8 | 14 | Changing per cent to decimals |
| 3 | 75 | 15 | Liquid measure |
| 5.5 | 70.6 | 12 | Changing common fractions to per cents |
| 5.5 | 70.6 | 12 | Finding per cent of a number |
| 5.5 | 70.6 | 12 | Changing decimals to per cents |
| 5.5 | 70.6 | 12 | Ratio and proportion |
| 8.5 | 66.7 | 12 | Meaning of percentage |
| 8.5 | 66.7 | 12 | Reading, writing decimals |
| 10.5 | 64.7 | 11 | Changing per cents to common fractions |
| 10.5 | 64.7 | 11 | Finding what per cent one number is of another |
| 13 | 62.5 | 10 | Finding a number when a per cent of it is known |
| 13 | 62.5 | 10 | Square root |
| 13 | 62.5 | 10 | Micrometer reading |
| 16 | 58.8 | 10 | Simple algebraic equation with one unknown |
| 16 | 58.8 | 10 | Improper fractions, mixed numbers |
| 16 | 58.8 | 10 | Reading a rule |
| 16 | 58.8 | 10 | Changing decimals to common fractions |
| 16 | 58.8 | 10 | Decimal equivalents |
| 19.5 | 56.3 | 9 | Multiplying whole numbers and decimals by 10,100, etc. |
| 19.5 | 56.3 | 9 | Dividing whole numbers and decimals by 10,100,etc. |
| 21 | 56.3 | 9 | Squaring a number |
| 22.5 | 55.6 | 10 | Comparing fractions |
| 22.5 | 55.6 | 10 | Changing common fractions to decimals |
| 25 | 52.9 | 9 | Area of triangle |
| 25 | 52.9 | 9 | Multiplication of decimals |
| 25 | 52.9 | 9 | Reducing mixed numbers to simplest form |
| 28 | 50 | 9 | Division, fractions |
| 28 | 50 | 8 | Area of trapezoid |
| 28 | 50 | 9 | Reducing fractions to lowest terms |
| 33 | 47.1 | 8 | Acute and obtuse angles |
| 33 | 47.1 | 8 | Finding length of unknown side of right triangle |
| 33 | 47.1 | 8 | Using pi $\pi$ |
| 33 | 47.1 | 8 | Circumference using $C = \pi d = 2\pi r$ |
| 33 | 47.1 | 8 | Division of decimals |
| 33 | 47.1 | 8 | Finding what part one number is of another |
| 33 | 47.1 | 8 | Multiplication, mixed numbers |
| 37 | 44.4 | 8 | Rounding off decimals |
| 38 | 43.8 | 7 | Finding a number when a fractional part of it is known |
| 41 | 41.2 | 7 | Measuring angles |
| 41 | 42.1 | 8 | Addition, fractions |
| 41 | 42.1 | 8 | Subtraction, fractions |
| 41 | 41.2 | 7 | Subtraction of decimals |
| 41 | 41.2 | 7 | Division, mixed numbers |
| 47.5 | 47.1 | 8 | Area of parallelogram |
| 47.5 | 47.1 | 8 | Area of circle |
| 47.5 | 47.1 | 8 | Volume of rectangular solid |
| 47.5 | 47.1 | 8 | Volume of cube |
| 47.5 | 47.1 | 8 | Volume of cylinder |
| 47.5 | 47.1 | 8 | Volume of sphere |
| 47.5 | 47.1 | 8 | Volume of cone |
| 47.5 | 47.1 | 8 | Volume of pyramid |
| 53 | 41.2 | 7 | Area of circle using $A = \pi r^2$ |
| 53 | 41.2 | 7 | Area of rectangle |
| 53 | 41.2 | 7 | Area of square |
| 56 | 38.9 | 7 | Multiplication, fractions |
| 56 | 38.9 | 7 | Addition, mixed numbers |
| 56 | 38.9 | 7 | Subtraction, mixed numbers |
| 58 | 35.3 | 6 | Addition of decimals |
| 59 | 33.3 | 6 | Averages |
| 60.5 | 22.2 | 4 | Multiplication, whole numbers |
| 60.5 | 22.2 | 4 | Division, whole numbers |
| 63 | 16.7 | 3 | Subtraction, whole numbers |
| 64 | 15.8 | 3 | Addition, whole numbers |
| 65 | 11.1 | 2 | Rounding numbers |
| 66 | 5.6 | 1 | Reading large numbers |

TABLE 65

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF HEALTH OTHER TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 3 | 95.8 | 23 | Addition, whole numbers |
| 3 | 95.8 | 23 | Subtraction, whole numbers |
| 3 | 95.8 | 23 | Multiplication, whole numbers |
| 3 | 95.8 | 23 | Division, whole numbers |
| 3 | 95.8 | 23 | Liquid measure |
| 6 | 87 | 20 | Addition of decimals |
| 8 | 83.3 | 20 | Addition, fractions |
| 8 | 83.3 | 20 | Subtraction, fractions |
| 8 | 83.3 | 20 | Multiplication, fractions |
| 15 | 82.6 | 19 | Improper fractions, mixed numbers |
| 15 | 82.6 | 19 | Reducing mixed numbers to simplest form |
| 15 | 82.6 | 19 | Reducing fractions to lowest terms |
| 15 | 82.6 | 19 | Multiplication, mixed numbers |
| 15 | 82.6 | 19 | Multiplying whole numbers and decimals by 10,100,etc. |
| 15 | 82.6 | 19 | Division, fractions |
| 15 | 82.6 | 19 | Reading large numbers |
| 15 | 82.6 | 19 | Decimal equivalents |
| 15 | 82.6 | 19 | Subtraction of decimals |
| 15 | 82.6 | 19 | Multiplication of decimals |
| 15 | 82.6 | 19 | Meaning of percentage |
| 25 | 78.3 | 18 | Division, mixed numbers |
| 25 | 78.3 | 18 | Reading, writing decimals |
| 25 | 78.3 | 18 | Addition, mixed numbers |
| 25 | 78.3 | 18 | Subtraction, mixed numbers |
| 25 | 78.3 | 18 | Changing common fractions to decimals |
| 25 | 78.3 | 18 | Rounding numbers |
| 25 | 78.3 | 18 | Averages |
| 25 | 78.3 | 18 | Division of decimals |
| 25 | 78.3 | 18 | Dividing whole numbers and decimals by 10,100,etc. |
| 31.5 | 73.9 | 17 | Changing per cent to decimals |
| 31.5 | 73.9 | 17 | Changing decimals to per cents |
| 31.5 | 73.9 | 17 | Ratio and proportion |
| 31.5 | 73.9 | 17 | Rounding off decimals |
| 34.5 | 69.6 | 16 | Changing decimals in common fractions |
| 34.5 | 69.6 | 16 | Comparing fractions |
| 36 | 66.7 | 16 | Temperature conversion |
| 37.5 | 65.2 | 15 | Finding what part one number is of another |
| 37.5 | 65.2 | 15 | Changing common fractions to per cents |
| 40 | 60.9 | 14 | Finding per cent of a number |
| 40 | 60.9 | 14 | Finding what per cent one number is of another |
| 40 | 60.9 | 14 | Changing per cents to common fractions |
| 42 | 56.5 | 13 | Finding a number when a per cent of it is known |
| 43.5 | 52.2 | 12 | Simple algebraic equation with one unknown |
| 43.5 | 52.2 | 12 | Finding a number when a fractional part of it is known |
| 45 | 27.3 | 6 | Reading a rule |
| 46 | 21.7 | 5 | Squaring a number |
| 47 | 13.6 | 3 | Square root |
| 48.5 | 13 | 3 | Volume of cube |
| 48.5 | 13 | 3 | Volume of cylinder |
| 50 | 9.1 | 2 | Micrometer reading |
| 52 | 8.7 | 2 | Volume of sphere |
| 52 | 8.7 | 2 | Measuring angles |
| 52 | 8.7 | 2 | Volume of rectangular solid |
| 55.5 | 4.3 | 1 | Acute and obtuse angles |
| 55.5 | 4.3 | 1 | Area of circle |
| 55.5 | 4.3 | 1 | Area of rectangle |
| 55.5 | 4.3 | 1 | Area of square |
| 62 | 0 | 0 | Volume of cone |
| 62 | 0 | 0 | Volume of pyramid |
| 62 | 0 | 0 | Area of parallelogram |
| 62 | 0 | 0 | Area of triangle |
| 62 | 0 | 0 | Area of trapezoid |
| 62 | 0 | 0 | Finding length of unknown side of right triangle |
| 62 | 0 | 0 | Using pi $\pi$ |
| 62 | 0 | 0 | Circumference using $C=\pi d=2\pi r$ |
| 62 | 0 | 0 | Area of circle using $A=\pi r2$ |

TABLE 66

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING HEALTH OTHER STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 95.7 | 22 | Temperature conversion |
| 2 | 91.3 | 21 | Ratio and proportion |
| 3.5 | 86.4 | 19 | Finding what per cent one number is of another |
| 3.5 | 86.4 | 19 | Finding a number when a per cent of it is known |
| 5 | 85 | 17 | Micrometer reading |
| 6 | 83.3 | 20 | Liquid measure |
| 7 | 82.6 | 19 | Changing common fractions to per cents |
| 8 | 81.8 | 18 | Finding what part one number is of another |
| 9 | 78.3 | 18 | Changing decimals to per cents |
| 10 | 77.3 | 17 | Finding a number when a fractional part of it is known |
| 12.5 | 75 | 15 | Volume of sphere |
| 12.5 | 75 | 15 | Volume of cone |
| 12.5 | 75 | 15 | Volume of pyramid |
| 12.5 | 75 | 15 | Area of trapezoid |
| 15.5 | 73.9 | 17 | Changing common fractions to decimals |
| 15.5 | 73.9 | 17 | Changing per cent to decimals |
| 17 | 71.4 | 15 | Simple algebraic equation with one unknown |
| 19 | 70 | 14 | Measuring angles |
| 19 | 70 | 14 | Area of parallelogram |
| 19 | 70 | 14 | Volume of cylinder |
| 21.5 | 69.6 | 16 | Changing per cents to common fractions |
| 21.5 | 69.6 | 16 | Decimal equivalents |
| 23 | 68.2 | 15 | Finding per cent of a number |
| 26.5 | 65 | 13 | Using pi $\pi$ |
| 26.5 | 65 | 13 | Circumference using $C = \pi d = 2\pi r$ |
| 26.5 | 65 | 13 | Area of circle using $A = \pi r^2$ |
| 26.5 | 65 | 13 | Acute and obtuse angles |
| 26.5 | 65 | 13 | Area of circle |
| 26.5 | 65 | 13 | Area of triangle |
| 30 | 61.9 | 13 | Reading a rule |
| 33.5 | 60.9 | 14 | Improper fractions, mixed numbers |
| 33.5 | 60.9 | 14 | Dividing whole numbers and decimals by 10,100,etc. |
| 33.5 | 60.9 | 14 | Changing decimals to common fractions |
| 33.5 | 60.9 | 14 | Division, mixed numbers |
| 33.5 | 60.9 | 14 | Reading, writing decimals |
| 33.5 | 60.9 | 14 | Rounding off decimals |
| 38 | 60 | 12 | Volume of rectangular solid |
| 38 | 60 | 12 | Volume of cube |
| 38 | 60 | 12 | Finding length of unknown side of right triangle |
| 40 | 57.1 | 12 | Square root |
| 42.5 | 56.5 | 13 | Division of decimals |
| 42.5 | 56.5 | 13 | Division, fractions |
| 42.5 | 56.5 | 13 | Reducing mixed numbers to simplest form |
| 42.5 | 56.5 | 13 | Multiplication, mixed numbers |
| 45 | 54.2 | 13 | Multiplication, fractions |
| 46 | 52.4 | 11 | Squaring a number |
| 47 | 52.2 | 12 | Comparing fractions |
| 49 | 50 | 10 | Area of rectangle |
| 49 | 50 | 10 | Area of square |
| 49 | 50 | 11 | Meaning of percentage |
| 51 | 45.5 | 10 | Reducing fractions to lowest terms |
| 52.5 | 43.5 | 10 | Addition, mixed numbers |
| 52.5 | 43.5 | 10 | Subtraction, mixed numbers |
| 54 | 41.7 | 10 | Subtraction, fractions |
| 55 | 39.1 | 9 | Multiplying whole numbers and decimals by 10,100,etc. |
| 56 | 37.5 | 9 | Addition, fractions |
| 58 | 34.8 | 8 | Addition of decimals |
| 58 | 34.8 | 8 | Averages |
| 58 | 34.8 | 8 | Multiplication of decimals |
| 60 | 30.4 | 7 | Rounding numbers |
| 61 | 26.1 | 6 | Subtraction of decimals |
| 62.5 | 20.8 | 5 | Multiplication, whole numbers |
| 62.5 | 20.8 | 5 | Division, whole numbers |
| 64 | 17.4 | 4 | Subtraction, whole numbers |
| 65 | 13.6 | 3 | Reading large numbers |
| 66 | 12.5 | 3 | Addition, whole numbers |

TABLE 67

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS OF HEALTH OCCUPATIONS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | SKILL |
|---|---|---|
| 1 | 98.1 | Liquid measure |
| 2 | 94.3 | Addition, whole numbers |
| 3.5 | 92.5 | Subtraction, whole numbers |
| 3.5 | 92.5 | Multiplication, whole numbers |
| 5 | 90.6 | Division, whole numbers |
| 6 | 80.4 | Reading, writing decimals |
| 7 | 76.5 | Meaning of percentage |
| 8 | 75 | Temperature conversion |
| 9 | 72.5 | Averages |
| 10 | 71.2 | Multiplication, fractions |
| 11 | 69.2 | Addition, fractions |
| 12.5 | 68.6 | Changing per cent to decimals |
| 12.5 | 68.6 | Changing common fractions to decimals |
| 14 | 67.3 | Subtraction, fractions |
| 15 | 67.2 | Subtraction of decimals |
| 16.5 | 66.7 | Division, fractions |
| 16.5 | 66.7 | Addition of decimals |
| 18 | 66 | Reading large numbers |
| 22.5 | 64.7 | Addition, mixed numbers |
| 22.5 | 64.7 | Subtraction, mixed numbers |
| 22.5 | 64.7 | Multiplication, mixed numbers |
| 22.5 | 64.7 | Rounding off decimals |
| 22.5 | 64.7 | Improper fractions, mixed numbers |
| 22.5 | 64.7 | Multiplication of decimals |
| 22.5 | 64.7 | Changing decimals to per cents |
| 22.5 | 64.7 | Decimal equivalents |
| 27 | 64 | Reducing fractions to lowest terms |
| 28.5 | 62.7 | Comparing fractions |
| 28.5 | 62.7 | Rounding numbers |
| 30 | 62 | Reducing mixed numbers to simplest form |
| 31 | 60.8 | Division, mixed numbers |
| 32 | 60 | Multiplying whole numbers and decimals by 10, 100, etc. |
| 33 | 52.9 | Changing common fractions to per cents |
| 34 | 59.2 | Ratio and proportion |
| 35 | 58.8 | Division of decimals |
| 36 | 58 | Dividing whole numbers and decimals by 10, 100, etc. |
| 37 | 56.9 | Changing decimals to common fractions |
| 38 | 54.9 | Finding per cent of a number |
| 39 | 46 | Finding what per cent one number is of another |
| 40 | 45.1 | Changing per cents to common fractions |
| 41 | 43.1 | Finding what part one number is of another |
| 42 | 40 | Simple algebraic equation with one unknown |
| 43 | 38.8 | Finding a number when a per cent of it is known |
| 44 | 36 | Finding a number when a fractional part of it is known |
| 45 | 34.7 | Reading a rule |
| 46 | 12 | Squaring a number |
| 47 | 10.2 | Micrometer reading |
| 48 | 10 | Volume of cylinder |
| 49 | 9.8 | Measuring angles |
| 50 | 8 | Volume of cube |
| 51 | 7.8 | Acute and obtuse angles |
| 52 | 6.1 | Square root |
| 54 | 6 | Area of circle |
| 54 | 6 | Volume of rectangular solid |
| 54 | 6 | Volume of sphere |
| 56.5 | 4 | Area of triangle |
| 56.5 | 4 | Area of square |
| 60 | 2 | Area of rectangle |
| 60 | 2 | Area of trapezoid |
| 60 | 2 | Area of parallelogram |
| 60 | 2 | Volume of cone |
| 60 | 2 | Volume of pyramid |
| 64.5 | 0 | Finding length of unknown side of right triangle |
| 64.5 | 0 | Using pi $\pi$ |
| 64.5 | 0 | Circumference using $C = \pi d = 2\pi r$ |
| 64.5 | 0 | Area of circle using $A = \pi r^2$ |

TABLE 68

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS OF HEALTH OCCUPATIONS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING STUDENT

| RANK | PERCENT | SKILL |
|---|---|---|
| 1 | 87.8 | Temperature conversion |
| 2 | 78.7 | Ratio and proportion |
| 3 | 77.4 | Liquid measure |
| 4 | 73.9 | Changing common fractions to per cents |
| 5 | 72.7 | Finding a number when a per cent of it is known |
| 6 | 72.3 | Changing per cent to decimals |
| 7.5 | 71.7 | Changing decimals to per cents |
| 7.5 | 71.7 | Finding what per cent one number is of another |
| 9 | 71.4 | Micrometer reading |
| 10 | 65.2 | Finding per cent of a number |
| 11 | 64.4 | Finding what part one number is of another |
| 12.5 | 63.8 | Changing common fractions to decimals |
| 12.5 | 63.8 | Decimal equivalents |
| 14 | 63 | Changing per cents to common fractions |
| 15 | 62.5 | Reading, writing decimals |
| 16 | 61.9 | Area of trapezoid |
| 17.5 | 61.4 | Finding a number when a fractional part of it is known |
| 17.5 | 61.4 | Simple algebraic equation with one unknown |
| 19 | 60.9 | Improper fractions, mixed numbers |
| 20 | 60.8 | Volume of cone |
| 21.5 | 60.5 | Volume of sphere |
| 21.5 | 60.5 | Volume of pyramid |
| 23 | 59.6 | Meaning of percentage |
| 24 | 58.7 | Changing decimals to common fractions |
| 25.5 | 58.1 | Area of parallelogram |
| 25.5 | 58.1 | Area of triangle |
| 27 | 57.8 | Reading a rule |
| 28 | 56.8 | Volume of cylinder |
| 29 | 56.5 | Dividing whole numbers and decimals by 10, 100, etc. |
| 30.5 | 55.8 | Square root |
| 30.5 | 55.8 | Area of circle |
| 32.5 | 55.6 | Measuring angles |
| 32.5 | 55.6 | Acute and obtuse angles |
| 34 | 55.3 | Comparing fractions |
| 35 | 54.3 | Reducing mixed numbers to simplest form |
| 36 | 54.2 | Rounding off decimals |
| 38.5 | 53.5 | Using pi $\pi r$ |
| 38.5 | 53.5 | Circumference using $C = \pi d = 2\pi r$ |
| 38.5 | 53.5 | Volume of rectangular solid |
| 38.5 | 53.5 | Volume of cube |
| 41 | 53.2 | Division, fractions |
| 42.5 | 52.2 | Multiplication, mixed numbers |
| 42.5 | 52.2 | Division, mixed numbers |
| 45 | 51.2 | Area of circle using $A = \pi r^2$ |
| 45 | 51.2 | Finding length of unknown side of right triangle |
| 45 | 51.2 | Squaring a number |
| 47.5 | 50 | Reducing fractions to lowest terms |
| 47.5 | 50 | Multiplication, fractions |
| 49 | 48.9 | Division of decimals |
| 50 | 46.5 | Area of square |
| 51 | 45.7 | Multiplying whole numbers and decimals by 10, 100, etc. |
| 52 | 44.9 | Subtraction, fractions |
| 53 | 44.2 | Area of rectangle |
| 54 | 42.9 | Addition, fractions |
| 55.5 | 42.6 | Addition, mixed numbers |
| 55.5 | 42.6 | Subtraction, mixed numbers |
| 57 | 40.4 | Multiplication of decimals |
| 58 | 39.6 | Averages |
| 59 | 34 | Addition of decimals |
| 60 | 31.9 | Subtraction of decimals |
| 61.5 | 23.5 | Multiplication, whole numbers |
| 61.5 | 23.5 | Division, whole numbers |
| 63 | 20.8 | Rounding numbers |
| 64 | 20 | Subtraction, whole numbers |
| 65 | 17.3 | Addition, whole numbers |
| 66 | 10.6 | Reading large numbers |

TABLE 69

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF AGRICULTURAL MECHANICS TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 8 | 100 | 15 | Rounding numbers |
| 8 | 100 | 15 | Addition, whole numbers |
| 8 | 100 | 15 | Subtraction, whole numbers |
| 8 | 100 | 15 | Multiplication, whole numbers |
| 8 | 100 | 15 | Division, whole numbers |
| 8 | 100 | 15 | Averages |
| 8 | 100 | 15 | Addition of decimals |
| 8 | 100 | 15 | Subtraction of decimals |
| 8 | 100 | 15 | Multiplication of decimals |
| 8 | 100 | 15 | Division of decimals |
| 8 | 100 | 15 | Changing decimals to common fractions |
| 8 | 100 | 15 | Reading a rule |
| 8 | 100 | 15 | Micrometer reading |
| 8 | 100 | 15 | Meaning of percentage |
| 8 | 100 | 15 | Changing common fractions to decimals |
| 19 | 93.3 | 14 | Addition, fractions |
| 19 | 93.3 | 14 | Subtraction, fractions |
| 19 | 93.3 | 14 | Decimal equivalents |
| 19 | 93.3 | 14 | Reading, writing decimals |
| 19 | 93.3 | 14 | Rounding off decimals |
| 19 | 93.3 | 14 | Finding per cent of a number |
| 19 | 93.3 | 14 | Ratio and proportion |
| 23 | 92.9 | 13 | Reducing fractions to lowest terms |
| 28.5 | 86.7 | 13 | Multiplication, fractions |
| 28.5 | 86.7 | 13 | Division, fractions |
| 28.5 | 86.7 | 13 | Comparing fractions |
| 28.5 | 86.7 | 13 | Area of rectangle |
| 28.5 | 86.7 | 13 | Area of square |
| 28.5 | 86.7 | 13 | Multiplication, mixed numbers |
| 28.5 | 86.7 | 13 | Division, mixed numbers |
| 28.5 | 86.7 | 13 | Liquid measure |
| 28.5 | 86.7 | 13 | Addition, mixed numbers |
| 28.5 | 86.7 | 13 | Finding what per cent one number is of another |
| 34 | 85.7 | 12 | Changing per cent to decimals |
| 39 | 80 | 12 | Changing decimals to per cents |
| 39 | 80 | 12 | Changing per cents to common fractions |
| 39 | 80 | 12 | Multiplying whole numbers and decimals by 10,100, etc. |
| 39 | 80 | 12 | Dividing whole numbers and decimals by 10,100,etc. |
| 39 | 80 | 12 | Reducing mixed numbers to simplest form |
| 39 | 80 | 12 | Circumference using $C = \pi d = 2\pi r$ |
| 39 | 80 | 12 | Subtraction, mixed numbers |
| 39 | 80 | 12 | Squaring a number |
| 39 | 80 | 12 | Volume of cylinder |
| 47 | 73.3 | 11 | Area of circle |
| 47 | 73.3 | 11 | Volume of rectangular solid |
| 47 | 73.3 | 11 | Changing common fractions to per cents |
| 47 | 73.3 | 11 | Reading large numbers |
| 47 | 73.3 | 11 | Area of circle using $A = \pi r^2$ |
| 47 | 73.3 | 11 | Using pi $\pi$ |
| 47 | 73.3 | 11 | Finding what part one number is of another |
| 51 | 71.4 | 10 | Finding a number when a fractional part of it is known |
| 52.5 | 66.7 | 10 | Improper fractions, mixed numbers |
| 52.5 | 66.7 | 10 | Finding a number when a per cent of it is known |
| 54.5 | 60 | 9 | Simple algebraic equation with one unknown |
| 54.5 | 60 | 9 | Volume of cube |
| 56.5 | 53.3 | 8 | Measuring angles |
| 56.5 | 53.3 | 8 | Area of triangle |
| 58.5 | 46.7 | 7 | Square root |
| 58.5 | 46.7 | 7 | Finding length of unknown side of triangle |
| 60 | 40 | 6 | Temperature conversion |
| 62 | 33.3 | 5 | Area of trapezoid |
| 62 | 33.3 | 5 | Acute and obtuse angles |
| 62 | 33.3 | 5 | Area of parallelogram |
| 64 | 26.7 | 4 | Volume of sphere |
| 65.5 | 20 | 3 | Volume of cone |
| 65.5 | 20 | 3 | Volume of pyramid |

TABLE 70

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING AGRICULTURAL MECHANICS STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 2 | 86.7 | 13 | Circumference using C = $\pi$d = 2$\pi$r |
| 2 | 86.7 | 13 | Area of triangle |
| 2 | 86.7 | 13 | Simple algebraic equation with one unknown |
| 4 | 85.7 | 12 | Area of circle using A = $\pi$r 2 |
| 9 | 80 | 12 | Ratio and proportion |
| 9 | 80 | 12 | Division, fractions |
| 9 | 80 | 12 | Finding length of unknown side of right triangle |
| 9 | 80 | 12 | Using pi $\pi$ |
| 9 | 80 | 12 | Changing common fractions to per cents |
| 9 | 80 | 12 | Area of trapezoid |
| 9 | 80 | 12 | Area of circle |
| 9 | 80 | 12 | Decimal equivalents |
| 9 | 80 | 12 | Finding what part one number is of another |
| 14.5 | 78.6 | 11 | Volume of cylinder |
| 14.5 | 78.6 | 11 | Volume of pyramid |
| 16 | 76.9 | 10 | Finding a number when a fractional part of it is known |
| 20 | 73.3 | 11 | Improper fractions, mixed numbers |
| 20 | 73.3 | 11 | Finding what per cent one number is of another |
| 20 | 73.3 | 11 | Multiplication, fractions |
| 20 | 73.3 | 11 | Changing per cents to common fractions |
| 20 | 73.3 | 11 | Square root |
| 20 | 73.3 | 11 | Micrometer reading |
| 20 | 73.3 | 11 | Changing common fractions to decimals |
| 24.5 | 71.4 | 10 | Temperature conversion |
| 24.5 | 71.4 | 10 | Volume of cube |
| 27 | 66.7 | 10 | Finding a number when a per cent of it is known |
| 27 | 66.7 | 10 | Changing decimals to common fractions |
| 27 | 66.7 | 10 | Area of parallelogram |
| 29.5 | 64.3 | 9 | Volume of sphere |
| 29.5 | 64.3 | 9 | Volume of cone |
| 31.5 | 60 | 9 | Reducing mixed numbers to simplest form |
| 31.5 | 60 | 9 | Volume of rectangular solid |
| 33.5 | 57.1 | 8 | Reducing fractions to lowest terms |
| 33.5 | 57.1 | 8 | Measuring angles |
| 37.5 | 53.3 | 8 | Division, mixed numbers |
| 37.5 | 53.3 | 8 | Comparing fractions |
| 37.5 | 53.3 | 8 | Changing decimals to per cents |
| 37.5 | 53.3 | 8 | Squaring a number |
| 37.5 | 53.3 | 8 | Area of rectangle |
| 37.5 | 53.3 | 8 | Area of square |
| 42 | 50 | 7 | Acute and obtuse angles |
| 42 | 50 | 7 | Addition, fractions |
| 42 | 50 | 7 | Subtraction, fractions |
| 44.5 | 46.7 | 7 | Reading a rule |
| 44.5 | 46.7 | 7 | Multiplication, mixed numbers |
| 46.5 | 46.2 | 6 | Multiplication of decimals |
| 46.5 | 46.2 | 6 | Division of decimals |
| 48 | 42.9 | 6 | Changing per cent to decimals |
| 50 | 40 | 6 | Reading, writing decimals |
| 50 | 40 | 6 | Liquid measure |
| 50 | 40 | 6 | Finding per cent of a number |
| 52.5 | 33.3 | 5 | Rounding off decimals |
| 52.5 | 33.3 | 5 | Subtraction of decimals |
| 56 | 26.7 | 4 | Multiplying whole numbers and decimals by 10,100,etc. |
| 56 | 26.7 | 4 | Dividing whole numbers and decimals by 10,100,etc. |
| 56 | 26.7 | 4 | Meaning of percentage |
| 56 | 26.7 | 4 | Addition of decimals |
| 56 | 26.7 | 4 | Division, whole numbers |
| 60.5 | 20 | 3 | Averages |
| 60.5 | 20 | 3 | Addition, mixed numbers |
| 60.5 | 20 | 3 | Subtraction, mixed numbers |
| 60.5 | 20 | 3 | Reading large numbers |
| 64 | 13.3 | 2 | Subtraction, whole numbers |
| 64 | 13.3 | 2 | Multiplication, whole numbers |
| 64 | 13.3 | 2 | Rounding numbers |
| 66 | 6.3 | 1 | Addition, whole numbers |

TABLE 71

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF AGRICULTURE/OTHER TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 3.5 | 100 | 48 | Addition, whole numbers |
| 3.5 | 100 | 48 | Subtraction, whole numbers |
| 3.5 | 100 | 48 | Multiplication, whole numbers |
| 3.5 | 100 | 48 | Division, whole numbers |
| 3.5 | 100 | 48 | Reading, writing decimals |
| 3.5 | 100 | 47 | Meaning of percentage |
| 8 | 97.9 | 46 | Addition of decimals |
| 8 | 97.9 | 46 | Subtraction of decimals |
| 8 | 97.9 | 46 | Multiplication of decimals |
| 10 | 95.8 | 46 | Averages |
| 11 | 95.7 | 44 | Reading a rule |
| 13 | 93.8 | 45 | Liquid measure |
| 13 | 93.8 | 45 | Rounding off decimals |
| 13 | 93.8 | 45 | Changing common fractions to decimals |
| 16 | 93.6 | 44 | Division of decimals |
| 16 | 93.6 | 44 | Multiplying whole numbers and decimals by 10,100,etc. |
| 16 | 93.6 | 44 | Dividing whole numbers and decimals by 10,100,etc. |
| 18.5 | 89.6 | 43 | Ratio and proportion |
| 18.5 | 89.6 | 43 | Area of square |
| 20.5 | 89.4 | 42 | Changing per cent to decimals |
| 20.5 | 89.4 | 42 | Changing decimals to per cents |
| 22.5 | 87.5 | 42 | Area of rectangle |
| 22.5 | 87.5 | 42 | Addition, fractions |
| 24 | 86.2 | 38 | Micrometer reading |
| 25.5 | 85.4 | 41 | Addition, mixed numbers |
| 25.5 | 85.4 | 41 | Measuring angles |
| 27 | 85.1 | 40 | Volume of rectangular solid |
| 29.5 | 83.3 | 40 | Subtraction, fractions |
| 29.5 | 83.3 | 40 | Comparing fractions |
| 29.5 | 83.3 | 40 | Rounding numbers |
| 29.5 | 83.3 | 40 | Subtraction, mixed numbers |
| 32 | 83 | 39 | Finding what per cent one number is of another |
| 34 | 81.3 | 39 | Reading large numbers |
| 34 | 81.3 | 39 | Reducing fractions to lowest terms |
| 34 | 81.3 | 39 | Multiplication, mixed numbers |
| 36 | 80.9 | 38 | Finding per cent of a number |
| 38 | 79.2 | 38 | Circumference using $C = \pi d = 2\pi r$ |
| 38 | 79.2 | 38 | Division, mixed numbers |
| 38 | 79.2 | 38 | Volume of cube |
| 40.5 | 76.6 | 36 | Changing common fractions to per cents |
| 40.5 | 76.6 | 36 | Area of circle |
| 42 | 76.1 | 35 | Decimal equivalents |
| 44.5 | 75 | 36 | Area of triangle |
| 44.5 | 75 | 36 | Using pi $\pi$ |
| 44.5 | 75 | 36 | Volume of cylinder |
| 44.5 | 75 | 36 | Multiplication, fractions |
| 47.5 | 74.5 | 35 | Changing decimals to common fractions |
| 47.5 | 74.5 | 35 | Reducing mixed numbers to simplest form |
| 49 | 72.9 | 35 | Area of circle using $A = \pi r^2$ |
| 50.5 | 72.3 | 34 | Changing per cents to common fractions |
| 50.5 | 72.3 | 34 | Simple algebraic equation with one unknown |
| 52 | 70.8 | 34 | Division, fractions |
| 53 | 70.2 | 33 | Finding what part one number is of another |
| 54.5 | 68.1 | 32 | Improper fractions, mixed numbers |
| 54.5 | 68.1 | 32 | Finding a number when a per cent of it is known |
| 56 | 66 | 31 | Area of parallelogram |
| 57 | 61.7 | 29 | Finding a number when a fractional part of it is known |
| 58.5 | 59.6 | 28 | Area of trapezoid |
| 58.5 | 59.6 | 28 | Squaring a number |
| 60 | 56.3 | 27 | Temperature conversion |
| 61 | 54.2 | 26 | Finding length of unknown side of right triangle |
| 62 | 51.1 | 24 | Volume of cone |
| 63 | 47.9 | 23 | Acute and obtuse angles |
| 64 | 42.6 | 20 | Volume of sphere |
| 65 | 39.1 | 18 | Volume of pyramid |
| 66 | 36.2 | 17 | Square root |

TABLE 72

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING AGRICULTURE OTHER STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 91.5 | 43 | Volume of cylinder |
| 2.5 | 91.3 | 42 | Volume of sphere |
| 2.5 | 91.3 | 42 | Volume of cone |
| 4 | 89.4 | 42 | Simple algebraic equation with one unknown |
| 5 | 89.1 | 41 | Volume of pyramid |
| 6 | 88.6 | 39 | Square root |
| 7 | 87.2 | 41 | Finding length of unknown side of right triangle |
| 8.5 | 87 | 40 | Division, fractions |
| 8.5 | 87 | 40 | Area of trapezoid |
| 10 | 86.7 | 39 | Finding a number when a fractional part of it is known |
| 11 | 85.4 | 41 | Ratio and proportion |
| 12.5 | 84.8 | 39 | Micrometer reading |
| 12.5 | 84.8 | 39 | Area of parallelogram |
| 14 | 84.1 | 37 | Decimal equivalents |
| 15 | 83.3 | 40 | Circumference using $C = \pi d = 2\pi r$ |
| 16 | 83 | 39 | Volume of rectangular solid |
| 17 | 82.6 | 38 | Multiplication, fractions |
| 18.5 | 82.2 | 37 | Changing decimals to common fractions |
| 18.5 | 82 2 | 37 | Finding a number when a per cent of it is known |
| 20 | 81.3 | 39 | Using pi $\pi$ |
| 21 | 80.9 | 38 | Acute and obtuse angles |
| 22.5 | 80.4 | 37 | Comparing fractions |
| 22.5 | 80.4 | 37 | Area of circle using $A = \pi r 2$ |
| 24 | 79.5 | 35 | Finding what per cent one number is of another |
| 25 | 79.2 | 38 | Changing common fractions to decimals |
| 26 | 78.7 | 37 | Division, mixed numbers |
| 27.5 | 78.3 | 36 | Improper fractions, mixed numbers |
| 27.5 | 78.3 | 36 | Multiplication, mixed numbers |
| 29 | 77.8 | 35 | Finding what part one number is of another |
| 30.5 | 77.1 | 37 | Measuring angles |
| 30.5 | 77.1 | 37 | Area of triangle |
| 32.5 | 76.6 | 36 | Subtraction, fractions |
| 32.5 | 76.6 | 36 | Area of circle |
| 34 | 75 | 36 | Volume of cube |
| 36 | 73.9 | 34 | Changing per cents to common fractions |
| 36 | 73.9 | 34 | Reducing fractions to lowest terms |
| 36 | 73.9 | 34 | Reducing mixed numbers to simplest form |
| 38 | 73.3 | 33 | Finding per cent of a number |
| 39 | 72.9 | 38 | Temperature conversion |
| 40 | 68.1 | 32 | Addition, fractions |
| 42.5 | 67.4 | 31 | Subtraction, mixed numbers |
| 42.5 | 67.4 | 31 | Changing per cent to decimals |
| 42.5 | 67.4 | 31 | Changing decimals to per cents |
| 42.5 | 67.4 | 31 | Changing common fractions to per cents |
| 45 | 61.7 | 29 | Addition, mixed numbers |
| 46.5 | 58.3 | 28 | Reading, writing decimals |
| 46.5 | 58.3 | 28 | Rounding off decimals |
| 48 | 54.5 | 24 | Squaring a number |
| 49 | 53.3 | 24 | Reading a rule |
| 50 | 52.2 | 24 | Division of decimals |
| 51.5 | 47.9 | 23 | Liquid measure |
| 51.5 | 47.9 | 23 | Area of rectangle |
| 53.5 | 46.7 | 21 | Dividing whole numbers and decimals by 10,100,etc. |
| 53.5 | 46.7 | 21 | Meaning of percentage |
| 55.5 | 43.8 | 21 | Area of square |
| 55.5 | 43.8 | 21 | Averages |
| 57 | 41.3 | 19 | Multiplication of decimals |
| 58 | 35.6 | 16 | Multiplying whole numbers and decimals by 10,100,etc. |
| 59 | 27.7 | 13 | Rounding numbers |
| 60 | 23.9 | 11 | Subtraction of decimals |
| 61 | 23.9 | 11 | Division, whole numbers |
| 62 | 21.7 | 10 | Addition of decimals |
| 63 | 18.8 | 9 | Multiplication, whole numbers |
| 64 | 17 | 8 | Reading large numbers |
| 65.5 | 14.6 | 7 | Addition, whole numbers |
| 65.5 | 14.6 | 7 | Subtraction, whole numbers |

TABLE 73

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF AGRICULTURAL PRODUCTION TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 100 | 96 | Reading a rule |
| 2.5 | 99 | 97 | Multiplication, whole numbers |
| 2.5 | 99 | 97 | Division, whole numbers |
| 4.5 | 98 | 96 | Addition, whole numbers |
| 4.5 | 98 | 96 | Subtraction, whole numbers |
| 7 | 97.9 | 95 | Meaning of percentage |
| 7 | 97.9 | 94 | Changing per cent to decimals |
| 7 | 97.9 | 93 | Changing decimals to per cents |
| 9 | 96.9 | 95 | Reading, writing decimals |
| 10 | 95.9 | 94 | Liquid measure |
| 11 | 95.8 | 92 | Finding per cent of a number |
| 12.5 | 94.9 | 93 | Rounding off decimals |
| 12.5 | 94.9 | 93 | Averages |
| 14 | 93.9 | 92 | Area of square |
| 15 | 93.8 | 90 | Micrometer reading |
| 17 | 92.9 | 91 | Addition of decimals |
| 17 | 92.9 | 91 | Subtraction of decimals |
| 17 | 92.9 | 91 | Area of rectangle |
| 19 | 91.8 | 90 | Multiplying whole numbers and decimals by 10, 100, etc. |
| 20 | 90.8 | 89 | Addition, mixed numbers |
| 21 | 90.7 | 88 | Multiplication of decimals |
| 22 | 89.8 | 88 | Division of decimals |
| 23 | 89.7 | 87 | Dividing whole numbers and decimals by 10, 100, etc. |
| 24 | 89.6 | 86 | Rounding numbers |
| 25.5 | 89.4 | 84 | Finding what part one number is of another |
| 25.5 | 89.4 | 84 | Finding what per cent one number is of another |
| 27 | 88.8 | 87 | Changing common fractions to decimals |
| 28.5 | 87.8 | 86 | Ratio and proportion |
| 28.5 | 87.8 | 86 | Subtraction, mixed numbers |
| 31.5 | 86.7 | 85 | Reducing fractions to lowest terms |
| 31.5 | 86.7 | 85 | Addition, fractions |
| 31.5 | 86.7 | 85 | Subtraction, fractions |
| 31.5 | 86.7 | 85 | Measuring angles |
| 34.5 | 84.2 | 80 | Finding a number when a per cent of it is known |
| 34.5 | 84.2 | 80 | Reading large numbers |
| 36 | 83.7 | 82 | Multiplication, fractions |
| 38 | 82.7 | 81 | Reducing mixed numbers to simplest form |
| 38 | 82.7 | 81 | Multiplication, mixed numbers |
| 38 | 82.7 | 81 | Comparing fractions |
| 40 | 82.5 | 80 | Division, fractions |
| 41 | 82.1 | 78 | Changing common fractions to per cents |
| 42 | 81.6 | 80 | Volume of cylinder |
| 43 | 81.4 | 79 | Area of circle |
| 44 | 80.4 | 78 | Division, mixed numbers |
| 45 | 79.6 | 78 | Volume of rectangular solid |
| 46 | 79.2 | 76 | Changing per cents to common fractions |
| 47.5 | 78.6 | 77 | Decimal equivalents |
| 47.5 | 78.6 | 77 | Volume of cube |
| 49 | 76.3 | 74 | Improper fractions, mixed numbers |
| 50 | 75.5 | 74 | Area of circle using $A = \pi r^2$ |
| 51 | 74.5 | 73 | Changing decimals to common fractions |
| 52 | 74.2 | 69 | Finding a number when a fractional part of it is known |
| 53 | 73.5 | 72 | Using pi $\pi$ |
| 54.5 | 72.4 | 71 | Circumference using $C = \pi d = 2\pi r$ |
| 54.5 | 72.4 | 71 | Area of triangle |
| 56 | 69.1 | 67 | Simple algebraic equation with one unknown |
| 57 | 68.8 | 66 | Squaring a number |
| 58 | 57.1 | 56 | Area of parallelogram |
| 59 | 55.1 | 54 | Finding length of unknown side of right triangle |
| 60 | 50 | 49 | Temperature conversion |
| 61 | 49 | 47 | Area of trapezoid |
| 62 | 43.2 | 41 | Volume of sphere |
| 63 | 38.1 | 37 | Acute and obtuse angles |
| 64 | 34 | 32 | Square root |
| 65 | 35.4 | 34 | Volume of cone |
| 66 | 31.3 | 30 | Volume of pyramid |

TABLE 74

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING AGRICULTURE PRODUCTION STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 91.7 | 88 | Ratio and proportion |
| 2 | 88.4 | 84 | Volume of cylinder |
| 3 | 85.1 | 80 | Volume of sphere |
| 4 | 82.3 | 80 | Area of circle |
| 5 | 83.2 | 79 | Finding length of unknown side of right triangle |
| 6 | 82.1 | 78 | Simple algebraic equation with one unknown |
| 7.5 | 81.9 | 77 | Volume of cone |
| 7.5 | 81.9 | 77 | Volume of pyramid |
| 9 | 81.7 | 76 | Temperature conversion |
| 10 | 80.9 | 76 | Acute and obtuse angles |
| 11 | 80.6 | 75 | Finding a number when a fractional part of it is known |
| 12.5 | 79.4 | 77 | Circumference using $C = \pi d = 2\pi r$ |
| 12.5 | 79.4 | 77 | Measuring angles |
| 14.5 | 78.9 | 75 | Area of circle using $A = \pi r^2$ |
| 14.5 | 78.9 | 75 | Area of trapezoid |
| 16 | 78.7 | 74 | Decimal equivalents |
| 17 | 77.3 | 75 | Division, fractions |
| 18 | 76.7 | 63 | Square root |
| 19 | 76.6 | 72 | Finding what part one number is of another |
| 20 | 76.3 | 71 | Finding a number when a per cent of it is known |
| 21 | 76 | 73 | Changing decimals to common fractions |
| 22.5 | 75.3 | 70 | Finding what per cent one number is of another |
| 22.5 | 75.3 | 73 | Area of triangle |
| 24 | 75 | 72 | Volume of cube |
| 25 | 74 | 71 | Area of parallelogram |
| 26.5 | 72.9 | 70 | Micrometer reading |
| 26.5 | 72.9 | 70 | Division, mixed numbers |
| 28 | 71.6 | 68 | Changing common fractions to decimals |
| 29 | 71.3 | 67 | Changing per cents to common fractions |
| 30 | 71.1 | 69 | Multiplication, fractions |
| 31.5 | 70.8 | 68 | Volume of rectangular solid |
| 31.5 | 70.8 | 68 | Improper fractions, mixed numbers |
| 33 | 70.7 | 65 | Changing common fractions to per cents |
| 34 | 70.5 | 67 | Finding per cent of a number |
| 35 | 70.1 | 68 | Using pi $\pi$ |
| 36 | 69.9 | 65 | Reducing mixed numbers to simplest form |
| 37 | 69.5 | 66 | Multiplication, mixed numbers |
| 38 | 68 | 66 | Comparing fractions |
| 39 | 64.6 | 62 | Changing decimals to per cents |
| 40 | 64.3 | 63 | Subtraction, fractions |
| 41 | 62.9 | 61 | Reducing fractions to lowest terms |
| 42 | 62.2 | 61 | Addition, fractions |
| 43 | 62.1 | 59 | Changing per cent to decimals |
| 44 | 60.4 | 58 | Subtraction, mixed numbers |
| 45 | 58.8 | 57 | Reading, writing decimals |
| 46 | 57.6 | 53 | Squaring a number |
| 47.5 | 57.3 | 55 | Addition, mixed numbers |
| 47.5 | 57.3 | 55 | Meaning of percentage |
| 49 | 55.2 | 53 | Division of decimals |
| 50 | 50.5 | 49 | Rounding off decimals |
| 51 | 50 | 47 | Multiplication of decimals |
| 52 | 48 | 47 | Liquid measure |
| 53 | 46.8 | 44 | Reading a rule |
| 54.5 | 42.9 | 42 | Averages |
| 54.5 | 42.9 | 42 | Area of rectangle |
| 56 | 39.4 | 37 | Dividing whole numbers and decimals by 10, 100, etc. |
| 57 | 35.1 | 34 | Area of square |
| 58 | 34.7 | 33 | Multiplying whole numbers and decimals by 10,100,etc. |
| 59 | 33.3 | 32 | Addition of decimals |
| 60 | 31.3 | 30 | Subtraction of decimals |
| 61 | 27.6 | 27 | Division, whole numbers |
| 62 | 27.4 | 26 | Reading large numbers |
| 63 | 25 | 24 | Rounding numbers |
| 64 | 23.5 | 23 | Multiplication, whole numbers |
| 65 | 15.3 | 15 | Subtraction, whole numbers |
| 66 | 12.2 | 12 | Addition, whole numbers |

TABLE 75

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF HORTICULTURE TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 4.5 | 94.4 | 17 | Reading a rule |
| 4.5 | 94.4 | 17 | Reading, writing decimals |
| 4.5 | 94.4 | 17 | Rounding off decimals |
| 4.5 | 94.4 | 17 | Changing common fractions to decimals |
| 4.5 | 94.4 | 17 | Addition, whole numbers |
| 4.5 | 94.4 | 17 | Subtraction, whole numbers |
| 4.5 | 94.4 | 17 | Multiplication, whole numbers |
| 4.5 | 94.4 | 17 | Division, whole numbers |
| 12.5 | 88.9 | 16 | Addition of decimals |
| 12.5 | 88.9 | 16 | Subtraction of decimals |
| 12.5 | 88.9 | 16 | Multiplication of decimals |
| 12.5 | 88.9 | 16 | Division of decimals |
| 12.5 | 88.9 | 16 | Multiplying whole numbers and decimals by 10,100,etc. |
| 12.5 | 88.9 | 16 | Averages |
| 12.5 | 88.9 | 16 | Liquid measure |
| 12.5 | 88.9 | 16 | Meaning of percentage |
| 18.5 | 83.3 | 15 | Rounding numbers |
| 18.5 | 83.3 | 15 | Dividing whole numbers and decimals by 10,100, etc. |
| 18.5 | 83.3 | 15 | Area of rectangle |
| 18.5 | 83.3 | 15 | Area of square |
| 24 | 77.8 | 14 | Changing per cent to decimals |
| 24 | 77.8 | 14 | Changing decimals to per cents |
| 24 | 77.8 | 14 | Finding per cent of a number |
| 24 | 77.8 | 14 | Multiplication, fractions |
| 24 | 77.8 | 14 | Changing decimals to common fractions |
| 24 | 77.8 | 14 | Ratio and proportion |
| 24 | 77.8 | 14 | Reducing fractions to lowest |
| 28 | 76.5 | 13 | Multiplication, mixed numbers |
| 30.5 | 72.2 | 13 | Addition, fractions |
| 30.5 | 72.2 | 13 | Subtraction, fractions |
| 30.5 | 72.2 | 13 | Division, fractions |
| 30.5 | 72.2 | 13 | Area of circle |
| 33 | 70.6 | 12 | Reading large numbers |
| 36.5 | 66.7 | 12 | Temperature conversion |
| 36.5 | 66.7 | 12 | Volume of cube |
| 36.5 | 66.7 | 12 | Division, mixed numbers |
| 36.5 | 66.7 | 12 | Addition, mixed numbers |
| 36.5 | 66.7 | 12 | Decimal equivalents |
| 36.5 | 66.7 | 12 | Changing common fractions to per cents |
| 42.5 | 61.1 | 11 | Finding what per cent one number is of another |
| 42.5 | 61.1 | 11 | Finding a number when a per cent of it is known |
| 42.5 | 61.1 | 11 | Subtraction, mixed numbers |
| 42.5 | 61.1 | 11 | Changing per cents to common fractions |
| 42.5 | 61.1 | 11 | Micrometer reading |
| 42.5 | 61.1 | 11 | Measuring angles |
| 48.5 | 55.6 | 10 | Area of circle using $A = \pi r^2$ |
| 48.5 | 55.6 | 10 | Area of triangle |
| 48.5 | 55.6 | 10 | Simple algebraic equation with one unknown |
| 48.5 | 55.6 | 10 | Finding what part one number is of another |
| 48.5 | 55.6 | 10 | Reducing mixed numbers to simplest form |
| 48.5 | 55.6 | 10 | Volume of rectangular solid |
| 54 | 50 | 9 | Comparing fractions |
| 54 | 50 | 9 | Improper fractions, mixed |
| 54 | 50 | 9 | Finding a number when a fractional part of it is known |
| 54 | 50 | 9 | Using pi $\pi$ |
| 54 | 50 | 9 | Circumference using $C = \pi d = 2\pi r$ |
| 57.5 | 44.4 | 8 | Squaring a number |
| 57.5 | 44.4 | 8 | Area of parallelogram |
| 59 | 33.3 | 6 | Acute and obtuse angles |
| 60 | 27.8 | 5 | Volume of cylinder |
| 61 | 22.2 | 4 | Square root |
| 62.5 | 16.7 | 3 | Volume of pyramid |
| 62.5 | 16.7 | 3 | Area of trapezoid |
| 64.5 | 11.1 | 2 | Volume of sphere |
| 64.5 | 11.1 | 2 | Finding length of unknown side of right triangle |
| 66 | 5.6 | 1 | Volume of cone |

TABLE 76

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING HORTICULTURE STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1.5 | 76.5 | 13 | Measuring angles |
| 1.5 | 76.5 | 13 | Area of parallelogram |
| 3 | 75 | 12 | Circumference using $C=\pi d=2\pi r$ |
| 4 | 70.6 | 12 | Finding a number when a fractional part of it is known |
| 5.5 | 68.8 | 11 | Volume of cone |
| 5.5 | 68.8 | 11 | Volume of pyramid |
| 10 | 66.7 | 12 | Simple algebraic equation with one unknown |
| 10 | 66.7 | 12 | Ratio and proportion |
| 10 | 66.7 | 12 | Averages |
| 10 | 66.7 | 12 | Reducing fractions to lowest terms |
| 10 | 66.7 | 12 | Changing decimals to common fractions |
| 10 | 66.7 | 12 | Reading, writing decimals |
| 10 | 66.7 | 12 | Volume of sphere |
| 15.5 | 64.7 | 11 | Multiplication of decimals |
| 15.5 | 64.7 | 11 | Area of triangle |
| 15.5 | 64.7 | 11 | Area of trapezoid |
| 15.5 | 64.7 | 11 | Using pi $\pi$ |
| 18.5 | 62.5 | 10 | Finding length of unknown side of right triangle |
| 18.5 | 62.5 | 10 | Volume of cylinder |
| 20.5 | 61.1 | 11 | Rounding off decimals |
| 20.5 | 61.1 | 11 | Squaring a number |
| 22 | 60 | 9 | Temperature conversion |
| 27 | 58.8 | 10 | Micrometer reading |
| 27 | 58.8 | 10 | Finding what per cent one number is of another |
| 27 | 58.8 | 10 | Finding a number when a per cent of it is known |
| 27 | 58.8 | 10 | Finding what part one number is of another |
| 27 | 58.8 | 10 | Area of circle using $A=\pi r\ 2\pi$ |
| 27 | 58.8 | 10 | Addition of decimals |
| 27 | 58.8 | 10 | Division, fractions |
| 27 | 58.8 | 10 | Addition, fractions |
| 27 | 58.8 | 10 | Meaning of percentage |
| 33.5 | 56.3 | 9 | Acute and obtuse angles |
| 33.5 | 56.3 | 9 | Changing per cent to decimals |
| 33.5 | 56.3 | 9 | Changing decimals to per cents |
| 33.5 | 56.3 | 9 | Dividing whole numbers and decimals by 10, 100, etc. |
| 38.5 | 55.6 | 10 | Volume of rectangular solid |
| 38.5 | 55.6 | 10 | Volume of cube |
| 38.5 | 55.6 | 10 | Rounding numbers |
| 38.5 | 55.6 | 10 | Multiplication, fractions |
| 38.5 | 55.6 | 10 | Changing common fractions to decimals |
| 38.5 | 55.6 | 10 | Area of rectangle |
| 45 | 52.9 | 9 | Area of circle |
| 45 | 52.9 | 9 | Division of decimals |
| 45 | 52.9 | 9 | Multiplying whole numbers and decimals by 10, 100,etc. |
| 45 | 52.9 | 9 | Subtraction of decimals |
| 45 | 52.9 | 9 | Liquid measure |
| 45 | 52.9 | 9 | Finding per cent of a number |
| 45 | 52.9 | 9 | Square root |
| 51 | 50 | 9 | Area of square |
| 51 | 50 | 8 | Changing per cents to common fractions |
| 51 | 50 | 8 | Changing common fractions to per cents |
| 51 | 50 | 8 | Decimal equivalents |
| 51 | 50 | 9 | Division, whole numbers |
| 56 | 47.1 | 8 | Improper fractions, mixed numbers |
| 56 | 47.1 | 8 | Subtraction, fractions |
| 56 | 47.1 | 8 | Division, mixed numbers |
| 56 | 47.1 | 8 | Subtraction, mixed numbers |
| 56 | 47.1 | 8 | Multiplication, mixed numbers |
| 60 | 44.4 | 8 | Reading large numbers |
| 60 | 44.4 | 8 | Addition, mixed numbers |
| 60 | 44.4 | 8 | Reading a rule |
| 62 | 41.2 | 7 | Reducing mixed numbers to simplest form |
| 63 | 38.9 | 7 | Multiplication, whole numbers |
| 64 | 35.3 | 6 | Comparing fractions |
| 65.5 | 33.3 | 6 | Addition, whole numbers |
| 65.5 | 33.3 | 6 | Subtraction, whole numbers |

TABLE 77

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS OF AGRICULTURE OCCUPATIONS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | SKILL |
|---|---|---|
| 1.5 | 98.9 | Multiplication, whole numbers |
| 1.5 | 98.9 | Division, whole numbers |
| 4 | 98.3 | Reading a rule |
| 4 | 98.3 | Addition, whole numbers |
| 4 | 98.3 | Subtraction, whole numbers |
| 6 | 97.7 | Meaning of percentage |
| 7 | 97.2 | Reading, writing decimals |
| 8 | 95 | Averages |
| 10 | 94.4 | Addition of decimals |
| 10 | 94.4 | Subtraction of decimals |
| 10 | 94.4 | Rounding off decimals |
| 12 | 93.9 | Liquid measure |
| 13 | 93.2 | Multiplication of decimals |
| 14 | 92.6 | Changing per cent to decimals |
| 15 | 92 | Changing decimals to per cents |
| 16.5 | 91.6 | Division of decimals |
| 16.5 | 91.6 | Changing common fractions to decimals |
| 18 | 91.1 | Area of square |
| 19 | 91 | Multiplying whole numbers and decimals by 10,100, etc. |
| 20 | 89.9 | Area of rectangle |
| 21 | 89.8 | Finding per cent of a number |
| 22 | 89.3 | Dividing whole numbers and decimals by 10,100,etc. |
| 23 | 88.1 | Rounding numbers |
| 24 | 88 | Micrometer reading |
| 25 | 87.7 | Ratio and proportion |
| 26 | 86.6 | Addition, mixed numbers |
| 27 | 86 | Addition, fractions |
| 28 | 84.9 | Subtraction, fractions |
| 29 | 84.8 | Reducing fractions to lowest terms |
| 30 | 84.5 | Finding what per cent one number is of another |
| 31 | 83.2 | Subtraction, mixed numbers |
| 32 | 82 | Multiplication, mixed numbers |
| 33 | 81.1 | Reading large numbers |
| 34.5 | 81 | Measuring angles |
| 34.5 | 81 | Multiplication, fractions |
| 36 | 79.9 | Comparing fractions |
| 37 | 79.3 | Finding what part one number is of another |
| 38 | 79.2 | Division, mixed numbers |
| 39 | 78.7 | Division, fractions |
| 40 | 78.5 | Area of circle |
| 41 | 78.3 | Changing common fractions to per cents |
| 42 | 78.1 | Volume of rectangular solid |
| 43 | 78 | Decimal equivalents |
| 44 | 77.5 | Reducing mixed numbers to simplest form |
| 45 | 77 | Changing decimals to common fractions |
| 46.5 | 76 | Finding a number when a per cent of it is known |
| 46.5 | 76 | Volume of cube |
| 48 | 75.6 | Changing per cents to common fractions |
| 49 | 74.3 | Volume of cylinder |
| 50.5 | 72.6 | Circumference using $C = \pi d = 2\pi r$ |
| 50.5 | 72.6 | Area of circle using $A = \pi r^2$ |
| 52 | 71.5 | Using pi $\pi$ |
| 53 | 70.6 | Improper fractions, mixed numbers |
| 54 | 69.8 | Area of triangle |
| 55 | 68 | Finding a number when a fractional part of it is known |
| 56 | 67.8 | Simple algebraic equation with one unknown |
| 57 | 64.8 | Squaring a number |
| 58 | 56.2 | Area of parallelogram |
| 59 | 52.5 | Temperature conversion |
| 60 | 49.7 | Finding length of unknown side of right triangle |
| 61 | 47.2 | Area of trapezoid |
| 62 | 39.9 | Acute and obtuse angles |
| 63 | 38.3 | Volume of sphere |
| 64 | 34.5 | Square root |
| 65 | 35.2 | Volume of cone |
| 66 | 30.9 | Volume of pyramid |

TABLE 78

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS OF AGRICULTURE OCCUPATIONS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING STUDENT

| RANK | PERCENT | SKILL |
|---|---|---|
| 1 | 86.4 | Ratio and proportion |
| 2 | 86 | Volume of cylinder |
| 3 | 83.1 | Volume of sphere |
| 4 | 82.9 | Simple algebraic equation with one unknown |
| 5 | 82.4 | Volume of pyramid |
| 6 | 81.8 | Volume of cone |
| 7 | 82.1 | Finding length of unknown side of right triangle |
| 8 | 81 | Finding a number when a fractional part of it is known |
| 9 | 80.7 | Circumference using $C=\pi d=2\pi r$ |
| 10 | 79.8 | Area of trapezoid |
| 11.5 | 78.3 | Area of circle |
| 11.5 | 78.3 | Division, fractions |
| 13 | 78.2 | Temperature conversion |
| 14 | 77.9 | Area of circle using $A=\pi r2$ |
| 15 | 77.5 | Decimal equivalents |
| 16 | 77.1 | Square root |
| 17 | 76.7 | Measuring angles |
| 18 | 76.4 | Area of parallelogram |
| 19 | 76 | Acute and obtuse angles |
| 20 | 75.9 | Changing decimals to common fractions |
| 21 | 75.7 | Area of triangle |
| 22 | 75.4 | Finding what part one number is of another |
| 23 | 75.3 | Finding a number when a per cent of it is known |
| 24 | 74.7 | Micrometer reading |
| 25 | 74.6 | Finding what per cent one number is of another |
| 26 | 73.4 | Using pi $\pi$ |
| 27.5 | 72.7 | Volume of cube |
| 27.5 | 72.7 | Multiplication, fractions |
| 29 | 72.2 | Changing common fractions to decimals |
| 30 | 71.6 | Volume of rectangular solid |
| 31 | 70.7 | Improper fractions, mixed numbers |
| 32 | 70.3 | Division, mixed numbers |
| 33 | 70.2 | Changing per cents to common fractions |
| 34 | 68.6 | Changing common fractions to per cents |
| 35 | 67.6 | Multiplication, mixed numbers |
| 36 | 67.3 | Reducing mixed numbers to simplest form |
| 37.5 | 66.9 | Finding per cent of a number |
| 37.5 | 66.9 | Comparing fractions |
| 39 | 65.7 | Reducing fractions to lowest terms |
| 40 | 64.8 | Subtraction, fractions |
| 41 | 63.6 | Changing decimals to per cents |
| 42 | 62.5 | Addition, fractions |
| 43 | 61.4 | Changing per cent to decimals |
| 44 | 57.9 | Reading, writing decimals |
| 45 | 57.5 | Subtraction, mixed numbers |
| 46 | 56.8 | Squaring a number |
| 47 | 52.2 | Rounding off decimals |
| 48 | 52 | Meaning of percentage |
| 49 | 54 | Addition, mixed numbers |
| 50 | 53.5 | Division of decimals |
| 51 | 48.8 | Multiplication of decimals |
| 52 | 48.3 | Reading a rule |
| 53 | 47.8 | Liquid measure |
| 54 | 46.4 | Area of rectangle |
| 55 | 43.6 | Averages |
| 56 | 41.8 | Dividing whole numbers and decimals by 10, 100, etc. |
| 57 | 40.4 | Area of square |
| 58 | 36 | Multiplying whole numbers and decimals by 10, 100, etc. |
| 59 | 32.2 | Addition of decimals |
| 60 | 31.6 | Subtraction of decimals |
| 62 | 27.8 | Rounding numbers |
| 61 | 28.5 | Division, whole numbers |
| 63 | 25.7 | Reading large numbers |
| 64 | 22.9 | Multiplication, whole numbers |
| 65 | 16.8 | Subtraction, whole numbers |
| 66 | 14.1 | Addition, whole numbers |

TABLE 79

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF CHILD CARE GUIDANCE TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 2.5 | 83.3 | 10 | Averages |
| 2.5 | 83.3 | 10 | Subtraction, whole numbers |
| 2.5 | 83.3 | 10 | Addition, whole numbers |
| 2.5 | 83.3 | 10 | Multiplication, whole numbers |
| 5 | 75 | 9 | Division, whole numbers |
| 8 | 66.7 | 8 | Changing decimals to per cents |
| 8 | 66.7 | 8 | Addition, fractions |
| 8 | 66.7 | 8 | Changing per cent to decimals |
| 8 | 66.7 | 8 | Multiplying whole numbers and decimals by 10, 100, etc. |
| 8 | 66.7 | 8 | Finding per cent of a number |
| 16.5 | 58.3 | 7 | Subtraction, fractions |
| 16.5 | 58.3 | 7 | Division, fractions |
| 16.5 | 58.3 | 7 | Dividing whole numbers and decimals by 10, 100, etc. |
| 16.5 | 58.3 | 7 | Multiplication of decimals |
| 16.5 | 58.3 | 7 | Subtraction of decimals |
| 16.5 | 58.3 | 7 | Reducing fractions to lowest terms |
| 16.5 | 58.3 | 7 | Multiplication, fractions |
| 16.5 | 58.3 | 7 | Division of decimals |
| 16.5 | 58.3 | 7 | Changing common fractions to per cents |
| 16.5 | 58.3 | 7 | Addition of decimals |
| 16.5 | 58.3 | 7 | Liquid measure |
| 16.5 | 58.3 | 7 | Meaning of percentage |
| 23 | 54.5 | 6 | Changing decimals to common fractions |
| 27.5 | 50 | 6 | Changing per cents to common fractions |
| 27.5 | 50 | 6 | Decimal equivalents |
| 27.5 | 50 | 6 | Reading a rule |
| 27.5 | 50 | 6 | Comparing fractions |
| 27.5 | 50 | 6 | Addition, mixed numbers |
| 27.5 | 50 | 6 | Rounding numbers |
| 27.5 | 50 | 6 | Multiplication, mixed numbers |
| 27.5 | 50 | 6 | Finding what per cent one number is of another |
| 35.5 | 41.7 | 5 | Reducing mixed numbers to simplest form |
| 35.5 | 41.7 | 5 | Improper fractions, mixed numbers |
| 35.5 | 41.7 | 5 | Division, mixed numbers |
| 35.5 | 41.7 | 5 | Reading, writing decimals |
| 35.5 | 41.7 | 5 | Subtraction, mixed numbers |
| 35.5 | 41.7 | 5 | Reading large numbers |
| 35.5 | 41.7 | 5 | Changing common fractions to decimals |
| 35.5 | 41.7 | 5 | Rounding off decimals |
| 41 | 33.3 | 4 | Finding what part one number is of another |
| 41 | 33.3 | 4 | Finding a number when a fractional part of it is known |
| 41 | 33.3 | 4 | Ratio and proportion |
| 43.5 | 25 | 3 | Area of square |
| 43.5 | 25 | 3 | Temperature conversion |
| 47.5 | 16.7 | 2 | Area of rectangle |
| 47.5 | 16.7 | 2 | Simple algebraic equation with one unknown |
| 47.5 | 16.7 | 2 | Measuring angles |
| 47.5 | 16.7 | 2 | Squaring a number |
| 47.5 | 16.7 | 2 | Square root |
| 47.5 | 16.7 | 2 | Finding a number when a per cent of it is known |
| 58 | 8.3 | 1 | Volume of sphere |
| 58 | 8.3 | 1 | Area of triangle |
| 58 | 8.3 | 1 | Area of circle |
| 58 | 8.3 | 1 | Finding length of unknown side of right triangle |
| 58 | 8.3 | 1 | Acute and obtuse angles |
| 58 | 8.3 | 1 | Area of parallelogram |
| 58 | 8.3 | 1 | Volume of cube |
| 58 | 8.3 | 1 | Volume of cone |
| 58 | 8.3 | 1 | Volume of pyramid |
| 58 | 8.3 | 1 | Area of circle using $A = \pi r^2$ |
| 58 | 8.3 | 1 | Circumference using $C = \pi d = 2\pi r$ |
| 58 | 8.3 | 1 | Area of trapezoid |
| 58 | 8.3 | 1 | Volume of rectangular solid |
| 58 | 8.3 | 1 | Volume of cylinder |
| 58 | 8.3 | 1 | Using pi $\pi$ |
| 66 | 0 | 0 | Micrometer reading |

TABLE 80

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING CHILD CARE GUIDANCE STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 4.5 | 88.9 | 8 | Volume of rectangular solid |
| 4.5 | 88.9 | 8 | Volume of cube |
| 4.5 | 88.9 | 8 | Volume of cylinder |
| 4.5 | 88.9 | 8 | Volume of sphere |
| 4.5 | 88.9 | 8 | Volume of cone |
| 4.5 | 88.9 | 8 | Using pi $\pi$ |
| 4.5 | 88.9 | 8 | Circumference using $C = \pi d = 2\pi r$ |
| 4.5 | 88.9 | 8 | Area of circle using $A = \pi r^2$ |
| 9 | 87.5 | 7 | Volume of pyramid |
| 10.5 | 77.8 | 7 | Micrometer reading |
| 10.5 | 77.8 | 7 | Area of trapezoid |
| 12 | 75 | 6 | Simple algebraic equation with one unknown |
| 14.5 | 70 | 7 | Changing per cents to common fractions |
| 14.5 | 70 | 7 | Changing common fractions to per cents |
| 14.5 | 70 | 7 | Finding per cent of a number |
| 14.5 | 70 | 7 | Finding what per cent one number is of another |
| 18 | 66.7 | 6 | Area of circle |
| 18 | 66.7 | 6 | Finding length of unknown side of right triangle |
| 18 | 66.7 | 6 | Ratio and proportion |
| 22.5 | 60 | 6 | Changing per cent to decimals |
| 22.5 | 60 | 6 | Changing decimals to per cents |
| 22.5 | 60 | 6 | Decimal equivalents |
| 22.5 | 60 | 6 | Addition, fractions |
| 22.5 | 60 | 6 | Finding a number when a per cent of it is known |
| 22.5 | 60 | 6 | Temperature conversion |
| 28 | 55.6 | 5 | Measuring angles |
| 28 | 55.6 | 5 | Area of parallelogram |
| 28 | 55.6 | 5 | Square root |
| 28 | 55.6 | 5 | Finding what part one number is of another |
| 28 | 55.6 | 5 | Finding a number when a fractional part of it is known |
| 37.5 | 50 | 5 | Addition of decimals |
| 37.5 | 50 | 5 | Subtraction of decimals |
| 37.5 | 50 | 5 | Multiplication of decimals |
| 37.5 | 50 | 5 | Division of decimals |
| 37.5 | 50 | 5 | Changing decimals to common fractions |
| 37.5 | 50 | 5 | Subtraction, fractions |
| 37.5 | 50 | 5 | Multiplication, fractions |
| 37.5 | 50 | 5 | Division, fractions |
| 37.5 | 50 | 5 | Comparing fractions |
| 37.5 | 50 | 4 | Acute and obtuse angles |
| 37.5 | 50 | 5 | Reducing mixed numbers to simplest form |
| 37.5 | 50 | 5 | Addition, mixed numbers |
| 37.5 | 50 | 5 | Division, mixed numbers |
| 37.5 | 50 | 5 | Rounding off decimals |
| 46 | 45.5 | 5 | Multiplication, mixed numbers |
| 46 | 45.5 | 5 | Reading large numbers |
| 46 | 45.5 | 5 | Rounding numbers |
| 49.5 | 44.4 | 4 | Area of rectangle |
| 49.5 | 44.4 | 4 | Area of square |
| 49.5 | 44.4 | 4 | Squaring a number |
| 49.5 | 44.4 | 4 | Area of triangle |
| 55.5 | 40 | 4 | Multiplying whole numbers and decimals by 10,100,etc. |
| 55.5 | 40 | 4 | Dividing whole numbers and decimals by 10,100,etc. |
| 55.5 | 40 | 4 | Meaning of percentage |
| 55.5 | 40 | 4 | Changing common fractions to decimals |
| 55.5 | 40 | 4 | Reducing fractions to lowest terms |
| 55.5 | 40 | 4 | Improper fractions, mixed numbers |
| 55.5 | 40 | 4 | Reading, writing decimals |
| 55.5 | 40 | 4 | Subtraction, mixed numbers |
| 60 | 36.4 | 4 | Reading a rule |
| 61 | 33.3 | 3 | Averages |
| 62.5 | 27.3 | 3 | Subtraction, whole numbers |
| 62.5 | 27.3 | 3 | Multiplication, whole numbers |
| 64.5 | 20 | 2 | Addition, whole numbers |
| 64.5 | 20 | 2 | Division, whole numbers |
| 66 | 18.2 | 2 | Liquid measure |

TABLE 81

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF GAINFUL HOME ECONOMICS - OTHER TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 3.5 | 95.2 | 20 | Addition, mixed numbers |
| 3.5 | 95.2 | 20 | Multiplication, whole numbers |
| 3.5 | 95.2 | 20 | Addition, whole numbers |
| 3.5 | 95.2 | 20 | Subtraction, whole numbers |
| 3.5 | 95.2 | 20 | Addition, fractions |
| 3.5 | 95.2 | 20 | Division, whole numbers |
| 8.5 | 90.5 | 19 | Averages |
| 8.5 | 90.5 | 19 | Subtraction, mixed numbers |
| 8.5 | 90.5 | 19 | Multiplication, mixed numbers |
| 8.5 | 90.5 | 19 | Division, fractions |
| 11.5 | 85.7 | 18 | Division, mixed numbers |
| 11.5 | 85.7 | 18 | Subtraction, fractions |
| 12 | 81 | 17 | Multiplication, fractions |
| 13 | 76.2 | 16 | Comparing fractions |
| 14 | 72.6 | 16 | Meaning of percentage |
| 16.5 | 71.4 | 15 | Reducing fractions to lowest terms |
| 16.5 | 71.4 | 15 | Rounding off decimals |
| 16.5 | 71.4 | 15 | Reading, writing decimals |
| 16.5 | 71.4 | 15 | Reducing mixed numbers to simplest form |
| 21 | 66.7 | 14 | Multiplication of decimals |
| 21 | 66.7 | 14 | Subtraction of decimals |
| 21 | 66.7 | 14 | Division of decimals |
| 21 | 66.7 | 14 | Dividing whole numbers and decimals by 10,100,etc. |
| 21 | 66.7 | 14 | Addition of decimals |
| 26 | 61.9 | 13 | Finding what per cent one number is of another |
| 26 | 61.9 | 13 | Changing common fractions to decimals |
| 26 | 61.9 | 13 | Rounding numbers |
| 26 | 61.9 | 13 | Improper fractions, mixed numbers |
| 26 | 61.9 | 13 | Multiplying whole numbers and decimals by 10,100,etc. |
| 29 | 60 | 12 | Changing per cent to decimals |
| 32.5 | 57.1 | 12 | Finding per cent of a number |
| 32.5 | 57.1 | 12 | Changing per cents to common fractions |
| 32.5 | 57.1 | 12 | Changing decimals to per cents |
| 32.5 | 57.1 | 12 | Decimal equivalents |
| 35.5 | 52.4 | 11 | Finding what part one number is of another |
| 35.5 | 52.4 | 11 | Finding a number when a fractional part of it is known |
| 35.5 | 52.4 | 11 | Changing decimals to common fractions |
| 35.5 | 52.4 | 11 | Reading a rule |
| 38 | 50 | 10 | Ratio and proportion |
| 39 | 47.9 | 10 | Finding a number when a per cent of it is known |
| 41 | 47.6 | 10 | Reading large numbers |
| 41 | 47.6 | 10 | Changing common fractions to per cents |
| 41 | 47.6 | 10 | Liquid measure |
| 43.5 | 28.6 | 6 | Area of square |
| 43.5 | 28.6 | 6 | Area of rectangle |
| 46 | 23.8 | 5 | Temperature conversion |
| 46 | 23.8 | 5 | Measuring angles |
| 46 | 23.8 | 5 | Squaring a number |
| 48 | 19 | 4 | Area of circle |
| 49 | 15 | 3 | Simple algebraic equation with one unknown |
| 52 | 14.3 | 3 | Area of triangle |
| 52 | 14.3 | 3 | Volume of cylinder |
| 52 | 14.3 | 3 | Circumference using $C = \pi d = 2\pi r$ |
| 52 | 14.3 | 3 | Area of circle using $A = \pi r^2$ |
| 52 | 14.3 | 3 | Square root |
| 55 | 10 | 2 | Area of parallelogram |
| 59 | 9.5 | 2 | Volume of cone |
| 59 | 9.5 | 2 | Volume of cube |
| 59 | 9.5 | 2 | Volume of sphere |
| 59 | 9.5 | 2 | Volume of pyramid |
| 59 | 9.5 | 2 | Volume of rectangular solid |
| 59 | 9.5 | 2 | Area of trapezoid |
| 59 | 9.5 | 2 | Acute and obtuse angles |
| 64.5 | 4.8 | 1 | Micrometer reading |
| 64.5 | 4.8 | 1 | Finding length of unknown side of right triangle |
| 64.5 | 4.8 | 1 | Using pi $\pi$ |

TABLE 82

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING GAINFUL HOME ECONOMICS [illegible] STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 80 | 16 | Division, mixed numbers |
| 2.5 | 77.8 | 14 | Finding what part one number is of another |
| 2.5 | 77.8 | 14 | Finding a number when a fractional part of it is known |
| 4.5 | 76.2 | 16 | Division, fractions |
| 4.5 | 76.2 | 16 | Multiplication, mixed numbers |
| 6.5 | 75 | 15 | Comparing fractions |
| 6.5 | 75 | 15 | Improper fractions, mixed numbers |
| 8.5 | 73.7 | 14 | Changing common fractions to decimals |
| 8.5 | 73.7 | 14 | Decimal equivalents |
| 11 | 72.2 | 13 | Finding what per cent one number is of another |
| 11 | 72.2 | 13 | Finding a number when a per cent of it is known |
| 11 | 72.2 | 13 | Square root |
| 13.5 | 71.4 | 15 | Reducing fractions to lowest terms |
| 13.5 | 71.4 | 15 | Multiplication, fractions |
| 15 | 70.6 | 12 | Ratio and proportion |
| 16.5 | 70 | 14 | Rounding off decimals |
| 16.5 | 70 | 14 | Reducing mixed numbers to simplest form |
| 19 | 68.4 | 13 | Changing per cents to common fractions |
| 19 | 68.4 | 13 | Changing decimals to common fractions |
| 19 | 68.4 | 13 | Measuring angles |
| 22.5 | 66.7 | 14 | Addition, mixed numbers |
| 22.5 | 66.7 | 14 | Subtraction, mixed numbers |
| 22.5 | 66.7 | 14 | Addition, fractions |
| 22.5 | 66.7 | 14 | Subtraction, fractions |
| 27.5 | 61.1 | 11 | Changing common fractions to per cents |
| 27.5 | 61.1 | 11 | Finding per cent of a number |
| 27.5 | 61.1 | 11 | Simple algebraic equation with one unknown |
| 27.5 | 61.1 | 11 | Micrometer reading |
| 27.5 | 61.1 | 11 | Squaring a number |
| 27.5 | 61.1 | 11 | Changing per cent to decimals |
| 31 | 58.8 | 10 | Circumference using $C = \pi d = 2\pi r$ |
| 32 | 57.9 | 11 | Changing decimals to per cents |
| 33 | 57.1 | 12 | Averages |
| 34 | 56.3 | 9 | Acute and obtuse angles |
| 35.5 | 55.6 | 10 | Multiplication of decimals |
| 35.5 | 55.6 | 10 | Division of decimals |
| 37 | 55 | 11 | Reading, writing decimals |
| 42.5 | 52.9 | 9 | Area of trapezoid |
| 42.5 | 52.9 | 9 | Area of parallelogram |
| 42.5 | 52.9 | 9 | Using pi $\pi$ |
| 42.5 | 52.9 | 9 | Temperature conversion |
| 42.5 | 52.9 | 9 | Volume of rectangular solid |
| 42.5 | 52.9 | 9 | Volume of cube |
| 42.5 | 52.9 | 9 | Volume of cylinder |
| 42.5 | 52.9 | 9 | Volume of sphere |
| 42.5 | 52.9 | 9 | Volume of cone |
| 42.5 | 52.9 | 9 | Volume of pyramid |
| 49 | 52.6 | 10 | Addition of decimals |
| 49 | 52.6 | 10 | Subtraction of decimals |
| 49 | 52.6 | 10 | Meaning of percentage |
| 51.5 | 50 | 9 | Reading a rule |
| 51.5 | 50 | 8 | Area of triangle |
| 53.5 | 47.1 | 8 | Area of circle |
| 53.5 | 47.1 | 8 | Finding length of unknown side of right triangle |
| 55 | 45 | 9 | Rounding numbers |
| 56.5 | 42.1 | 8 | Dividing whole numbers and decimals by 10,100,etc. |
| 56.5 | 41.2 | 7 | Area of circle using $A = \pi r^2$ |
| 58.5 | 38.1 | 8 | Multiplication, whole numbers |
| 58.5 | 38.1 | 8 | Division, whole numbers |
| 60 | 36.8 | 7 | Multiplying whole numbers and decimals by 10,100,etc. |
| 61 | 35.3 | 6 | Area of rectangle |
| 62 | 33.3 | 7 | Subtraction, whole numbers |
| 63 | 31.3 | 5 | Liquid measure |
| 64 | 29.4 | 5 | Area of square |
| 65 | 23.8 | 5 | Addition, whole numbers |
| 66 | 15.8 | 3 | Reading large numbers |

TABLE 83

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF FOOD PRODUCTION TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 2 | 100 | 40 | Addition, whole numbers |
| 2 | 100 | 40 | Subtraction, whole numbers |
| 2 | 100 | 40 | Multiplication, whole numbers |
| 4.5 | 97.5 | 39 | Division, whole numbers |
| 4.5 | 97.5 | 39 | Liquid measure |
| 6 | 92.5 | 37 | Addition, fractions |
| 7.5 | 89.5 | 34 | Reducing fractions to lowest terms |
| 7.5 | 89.5 | 34 | Division, fractions |
| 9 | 90 | 36 | Subtraction, fractions |
| 10.5 | 87.2 | 34 | Reading, writing decimals |
| 10.5 | 87.2 | 34 | Addition, mixed numbers |
| 12 | 86.8 | 33 | Multiplication, fractions |
| 13 | 84.6 | 33 | Subtraction, mixed numbers |
| 14 | 81.6 | 31 | Rounding off decimals |
| 16 | 76.9 | 30 | Multiplication, mixed numbers |
| 16 | 76.9 | 30 | Rounding numbers |
| 16 | 76.9 | 30 | Meaning of percentage |
| 18 | 74.4 | 29 | Division, mixed numbers |
| 19.5 | 73.7 | 28 | Averages |
| 19.5 | 73.7 | 28 | Changing common fractions to decimals |
| 21 | 73 | 27 | Reducing mixed numbers to simplest form |
| 22.5 | 71.8 | 28 | Finding per cent of a number |
| 22.5 | 71.8 | 28 | Ratio and proportion |
| 24 | 71.1 | 27 | Multiplication of decimals |
| 25 | 69.2 | 27 | Temperature conversion |
| 26.5 | 68.4 | 26 | Improper fractions, mixed numbers |
| 26.5 | 68.4 | 26 | Dividing whole numbers and decimals by 10, 100, etc. |
| 29 | 66.7 | 26 | Addition of decimals |
| 29 | 66.7 | 26 | Changing per cent to decimals |
| 29 | 66.7 | 26 | Subtraction of decimals |
| 31.5 | 65.8 | 25 | Multiplying whole numbers and decimals by 10, 100,etc |
| 31.5 | 65.8 | 25 | Division of decimals |
| 33.5 | 64.1 | 25 | Changing decimals to per cents |
| 33.5 | 61.1 | 22 | Comparing fractions |
| 35 | 59 | 23 | Reading large numbers |
| 36 | 56.4 | 22 | Changing decimals to common fractions |
| 37 | 53.8 | 21 | Changing per cents to common fractions |
| 38 | 52.6 | 20 | Changing common fractions to per cents |
| 39 | 50 | 19 | Decimal equivalents |
| 40.5 | 48.7 | 19 | Finding what part one number is of another |
| 40.5 | 48.7 | 19 | Finding what per cent one number is of another |
| 42.5 | 41 | 16 | Finding a number when a fractional part of it is known |
| 42.5 | 41 | 16 | Finding a number when a per cent of it is known |
| 44 | 28.2 | 11 | Simple algebraic equation with one unknown |
| 45 | 25.6 | 10 | Reading a rule |
| 46 | 12.8 | 5 | Volume of rectangular solid |
| 48 | 10.3 | 4 | Squaring a number |
| 48 | 10.3 | 4 | Measuring angles |
| 48 | 10.3 | 4 | Volume of cube |
| 53.5 | 7.7 | 3 | Volume of cylinder |
| 53.5 | 7.7 | 3 | Acute and obtuse angles |
| 53.5 | 7.7 | 3 | Circumference using $C = \pi d = 2\pi r$ |
| 53.5 | 7.7 | 3 | Area of circle using $A = \pi r^2$ |
| 53.5 | 7.7 | 3 | Using pi $\pi$ |
| 53.5 | 7.7 | 3 | Area of square |
| 53.5 | 7.7 | 3 | Area of circle |
| 53.5 | 7.7 | 3 | Area of rectangle |
| 59.5 | 5.1 | 2 | Volume of cone |
| 59.5 | 5.1 | 2 | Volume of pyramid |
| 59.5 | 5.1 | 2 | Square root |
| 59.5 | 5.1 | 2 | Finding length of unknown side of right triangle |
| 64 | 2.6 | 1 | Micrometer reading |
| 64 | 2.6 | 1 | Volume of sphere |
| 64 | 2.6 | 1 | Area of triangle |
| 64 | 2.6 | 1 | Area of parallelogram |
| 64 | 2.6 | 1 | Area of trapezoid |

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TABLE 84

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING FOOD PRODUCTION STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 80 | 28 | Division, fractions |
| 2 | 79.4 | 27 | Micrometer reading |
| 3 | 77.8 | 28 | Multiplication, fractions |
| 4 | 76.5 | 26 | Square root |
| 6.5 | 75.7 | 28 | Changing common fractions to decimals |
| 6.5 | 75.7 | 28 | Finding per cent of a number |
| 6.5 | 75.7 | 28 | Finding what per cent one number is of another |
| 6.5 | 75.7 | 28 | Comparing fractions |
| 10 | 75 | 27 | Ratio and proportion |
| 10 | 75 | 27 | Changing decimals to common fractions |
| 10 | 75 | 27 | Finding a number when a fractional part of it is known |
| 12 | 74.3 | 26 | Simple algebraic equation with one unknown |
| 13 | 73.7 | 28 | Subtraction, fractions |
| 14.5 | 73.5 | 25 | Area of square |
| 14.5 | 73.5 | 25 | Area of circle |
| 16.5 | 73 | 27 | Reducing fractions to lowest terms |
| 16.5 | 73 | 27 | Reading, writing decimals |
| 18.5 | 72.7 | 24 | Area of triangle |
| 18.5 | 72.7 | 24 | Area of trapezoid |
| 20.5 | 72.2 | 26 | Finding what part one number is of another |
| 20.5 | 72.2 | 26 | Improper fractions, mixed numbers |
| 22 | 71.8 | 28 | Addition, fractions |
| 23.5 | 70.6 | 24 | Area of rectangle |
| 23.5 | 70.6 | 24 | Acute and obtuse angles |
| 26 | 69.7 | 23 | Area of parallelogram |
| 26 | 69.7 | 23 | Volume of rectangular solid |
| 26 | 69.7 | 23 | Volume of pyramid |
| 28.5 | 69.4 | 25 | Finding a number when a per cent of it is known |
| 28.5 | 69.4 | 25 | Changing common fractions to per cents |
| 34 | 66.7 | 22 | Finding length of unknown side of right triangle |
| 34 | 67.6 | 23 | Using pi $\pi$ |
| 34 | 67.6 | 23 | Circumference using $C = \pi d = 2\pi r$ |
| 34 | 67.6 | 23 | Area of circle using $A = \pi r^2$ |
| 34 | 67.6 | 25 | Decimal equivalents |
| 34 | 67.6 | 23 | Volume of cube |
| 34 | 67.6 | 25 | Multiplication, mixed numbers |
| 34 | 67.6 | 25 | Division, mixed numbers |
| 34 | 67.6 | 25 | Changing per cents to common fractions |
| 40.5 | 66.7 | 24 | Reducing mixed numbers to simplest form |
| 40.5 | 66.7 | 22 | Volume of cylinder |
| 40.5 | 66.7 | 22 | Volume of sphere |
| 40.5 | 66.7 | 22 | Volume of cone |
| 43 | 65.8 | 25 | Changing per cent to decimals |
| 44.5 | 64.9 | 24 | Rounding off decimals |
| 44.5 | 64.9 | 24 | Meaning of percentage |
| 46 | 64.7 | 22 | Measuring angles |
| 48 | 63.2 | 24 | Liquid measure |
| 48 | 63.2 | 24 | Changing decimals to per cents |
| 48 | 63.2 | 24 | Addition, mixed numbers |
| 50 | 62.2 | 23 | Averages |
| 51 | 61.8 | 21 | Squaring a number |
| 52 | 61.1 | 22 | Temperature conversion |
| 53.5 | 60.5 | 23 | Subtraction, mixed numbers |
| 53.5 | 60.5 | 23 | Division of decimals |
| 55.5 | 59.5 | 22 | Addition of decimals |
| 55.5 | 59.5 | 22 | Multiplication of decimals |
| 57.5 | 55.6 | 20 | Dividing whole numbers and decimals by 10,100,etc. |
| 57.5 | 55.6 | 20 | Subtraction of decimals |
| 59 | 55.3 | 21 | Division, whole numbers |
| 60.5 | 51.4 | 19 | Multiplying whole numbers and decimals by 10,100,etc. |
| 60.5 | 51.4 | 18 | Reading a rule |
| 62 | 50 | 19 | Rounding numbers |
| 63 | 43.6 | 17 | Multiplication, whole numbers |
| 64 | 42.1 | 16 | Reading large numbers |
| 65.5 | 30.8 | 12 | Addition, whole numbers |
| 65.5 | 30.8 | 12 | Subtraction, whole numbers |

TABLE 85

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS OF GAINFUL HOME ECONOMICS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | SKILL |
|---|---|---|
| 1.5 | 95.9 | Multiplication, whole numbers |
| 1.5 | 95.9 | Addition, whole numbers |
| 3 | 95.5 | Subtraction, whole numbers |
| 4 | 93.2 | Division, whole numbers |
| 5 | 89 | Addition, fractions |
| 6 | 84.5 | Division, fractions |
| 7 | 83.6 | Subtraction, fractions |
| 8 | 83.3 | Addition, mixed numbers |
| 9.5 | 80.3 | Averages |
| 9.5 | 80.3 | Multiplication, fractions |
| 11 | 79.2 | Subtraction, mixed numbers |
| 12 | 78.9 | Reducing fractions to lowest terms |
| 13 | 76.7 | Liquid measure |
| 14 | 76.4 | Multiplication, mixed numbers |
| 15 | 75 | Reading, writing decimals |
| 16 | 73.6 | Meaning of percentage |
| 17 | 72.2 | Division, mixed numbers |
| 18 | 71.8 | Rounding off decimals |
| 19 | 68.1 | Rounding numbers |
| 20 | 67.6 | Multiplication of decimals |
| 21 | 67.1 | Reducing mixed numbers to simplest form |
| 22 | 66.7 | Finding per cent of a number |
| 23 | 66.2 | Dividing whole numbers and decimals by 10, 100, etc. |
| 24.5 | 65.3 | Addition of decimals |
| 24.5 | 65.3 | Subtraction of decimals |
| 27.5 | 64.8 | Changing common fractions to decimals |
| 27.5 | 64.8 | Division of decimals |
| 27.5 | 64.8 | Multiplying whole numbers and decimals by 10, 100, etc. |
| 27.5 | 64.8 | Changing per cent to decimals |
| 30 | 63.8 | Comparing fractions |
| 31 | 62.5 | Changing decimals to per cents |
| 32 | 62 | Improper fractions, mixed numbers |
| 33 | 59.2 | Ratio and proportion |
| 34 | 54.9 | Changing decimals to common fractions |
| 35 | 54.2 | Changing per cents to common fractions |
| 36.5 | 52.8 | Reading large numbers |
| 36.5 | 52.8 | Finding what per cent one number is of another |
| 38.5 | 52.1 | Changing common fractions to per cents |
| 38.5 | 52.1 | Decimal equivalents |
| 40 | 48.6 | Temperature conversion |
| 41 | 47.2 | Finding what part one number is of another |
| 42 | 43.1 | Finding a number when a fractional part of it is known |
| 43 | 38.9 | Finding a number when a per cent of it is known |
| 44 | 37.5 | Reading a rule |
| 45 | 22.5 | Simple algebraic equation with one unknown |
| 46 | 16.7 | Area of square |
| 48 | 15.3 | Area of rectangle |
| 48 | 15.3 | Measuring angles |
| 48 | 15.3 | Squaring a number |
| 50.5 | 11.1 | Area of circle |
| 50.5 | 11.1 | Volume of rectangular solid |
| 52 | 8.3 | Acute and obtuse angles |
| 55 | 9.7 | Circumference using $C = \pi d = 2\pi r$ |
| 55 | 9.7 | Area of circle using $A = \pi r^2$ |
| 55 | 9.7 | Square root |
| 55 | 9.7 | Volume of cube |
| 55 | 9.7 | Volume of cylinder |
| 59.5 | 6.9 | Area of triangle |
| 59.5 | 6.9 | Volume of cone |
| 59.5 | 6.9 | Volume of pyramid |
| 59.5 | 6.9 | Using pi $\pi$ |
| 63.5 | 5.6 | Volume of sphere |
| 63.5 | 5.6 | Area of parallelogram |
| 63.5 | 5.6 | Finding length of unknown side of right triangle |
| 63.5 | 5.6 | Area of trapezoid |
| 66 | 2.8 | Micrometer reading |

TABLE 86

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS OF GAINFUL HOME ECONOMICS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING STUDENT

| RANK | PERCENT | SKILL |
|---|---|---|
| 1 | 74.2 | Division, fractions |
| 2.5 | 73.8 | Micrometer reading |
| 2.5 | 73.8 | Finding what per cent one number is of another |
| 4 | 73 | Finding a number when a fractional part of it is known |
| 5 | 72.6 | Ratio and proportion |
| 6 | 72.1 | Square root |
| 7.5 | 71.6 | Multiplication, fractions |
| 7.5 | 71.6 | Comparing fractions |
| 9 | 71.4 | Finding what part one number is of another |
| 10 | 70.8 | Finding per cent of a number |
| 11 | 70.5 | Simple algebraic equation |
| 12 | 69.7 | Changing common fractions to decimals |
| 13 | 69.2 | Changing decimals to common fractions |
| 14 | 68.8 | Finding a number when a per cent of it is known |
| 15 | 68.6 | Addition, fractions |
| 16 | 68.7 | Division, mixed numbers |
| 17 | 68.3 | Circumference using C=$\pi$d=2$\pi$r |
| 19 | 68.2 | Changing per cents to common fractions |
| 19 | 68.2 | Improper fractions, mixed numbers |
| 19 | 68.2 | Decimal equivalents |
| 21 | 68.1 | Subtraction, fractions |
| 22.5 | 67.8 | Area of trapezoid |
| 22.5 | 67.8 | Volume of rectangular solid |
| 24 | 67.6 | Reducing fractions to lowest terms |
| 25.5 | 67.2 | Volume of pyramid |
| 25.5 | 67.2 | Changing common fractions to per cents |
| 28 | 66.7 | Volume of cube |
| 28 | 66.7 | Using pi $\pi$ |
| 28 | 66.7 | Multiplication, mixed numbers |
| 31 | 66.1 | Volume of cylinder |
| 31 | 66.1 | Volume of sphere |
| 31 | 66.1 | Volume of cone |
| 33 | 65.2 | Reducing mixed numbers to simplest form |
| 39 | 65 | Area of circle |
| 35 | 64.5 | Measuring angles |
| 36 | 64.2 | Rounding off decimals |
| 37 | 63.8 | Acute and obtuse angles |
| 38 | 63.6 | Changing per cent to decimals |
| 39 | 63.3 | Area of circle using A=$\pi$r2 |
| 40.5 | 62.7 | Area of parallelogram |
| 40.5 | 62.7 | Reading, writing decimals |
| 42 | 62.3 | Addition, mixed numbers |
| 43 | 62.1 | Area of triangle |
| 44 | 61.2 | Changing decimals to per cents |
| 45 | 61 | Finding length of unkown side of right triangle |
| 46 | 59.4 | Subtraction, mixed numbers |
| 47 | 59 | Squaring a number |
| 48 | 58.7 | Temperature conversion |
| 49.5 | 57.6 | Division of decimals |
| 49.5 | 57.6 | Meaning of percentage |
| 51 | 56.9 | Multiplication of decimals |
| 52 | 56.7 | Area of rectangle |
| 52 | 56.7 | Area of square |
| 52 | 56.7 | Averages |
| 55 | 56.1 | Addition of decimals |
| 56 | 53.8 | Subtraction of decimals |
| 57 | 49.2 | Dividing whole numbers and decimals by 10, 100, etc. |
| 58 | 48.4 | Reading a rule |
| 59 | 47.8 | Rounding numbers |
| 60 | 47.7 | Liquid measure |
| 61 | 45.5 | Multiplying whole numbers and decimals by 10, 100, etc. |
| 62 | 44.9 | Division, whole numbers |
| 63 | 39.4 | Multiplication, whole numbers |
| 64 | 35.3 | Reading large numbers |
| 65 | 31 | Subtraction, whole numbers |
| 66 | 27.1 | Addition, whole numbers |

TABLE 87

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF CHILD DEVELOPMENT TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 2 | 100 | 11 | Reading a rule |
| 2 | 100 | 12 | Subtraction, whole numbers |
| 5 | 91.7 | 11 | Multiplication, whole numbers |
| 5 | 91.7 | 11 | Division, whole numbers |
| 5 | 91.7 | 11 | Liquid measure |
| 7 | 90.9 | 10 | Reading, writing decimals |
| 8.5 | 83.3 | 10 | Reading large numbers |
| 8.5 | 83.3 | 10 | Averages |
| 10.5 | 75 | 9 | Rounding numbers |
| 10.5 | 75 | 9 | Addition, fractions |
| 14.5 | 72.7 | 8 | Division of decimals |
| 14.5 | 72.7 | 8 | Finding per cent of a number |
| 14.5 | 72.7 | 8 | Multiplication of decimals |
| 14.5 | 72.7 | 8 | Addition of decimals |
| 14.5 | 72.7 | 8 | Subtraction of decimals |
| 14.5 | 72.7 | 8 | Meaning of percentage |
| 18.5 | 70 | 7 | Addition, mixed numbers |
| 18.5 | 70 | 7 | Subtraction, mixed numbers |
| 20 | 66.7 | 8 | Subtraction, fractions |
| 24.5 | 63.6 | 7 | Comparing fractions |
| 24.5 | 63.6 | 7 | Multiplication, mixed numbers |
| 24.5 | 63.6 | 7 | Division, mixed numbers |
| 24.5 | 63.6 | 7 | Multiplying whole numbers and decimals by 10, 100, etc. |
| 24.5 | 63.6 | 7 | Dividing whole numbers and decimals by 10, 100, etc. |
| 24.5 | 63.6 | 7 | Finding what per cent one number is of another |
| 24.5 | 63.6 | 7 | Finding what part one number is of another |
| 24.5 | 63.6 | 7 | Ratio and proportion |
| 29 | 50 | 6 | Improper fractions, mixed numbers |
| 31.5 | 58.3 | 7 | Reducing mixed numbers to simplest form |
| 31.5 | 58.3 | 7 | Reducing fractions to lowest terms |
| 31.5 | 58.3 | 7 | Division, fractions |
| 31.5 | 58.3 | 7 | Multiplication, fractions |
| 40 | 45.5 | 5 | Changing decimals to per cents |
| 40 | 45.5 | 5 | Finding a number when a fractional part of it is known |
| 40 | 45.5 | 5 | Rounding off decimals |
| 40 | 45.5 | 5 | Changing per cent to decimals |
| 40 | 45.5 | 5 | Decimal equivalents |
| 40 | 45.5 | 5 | Changing decimals to common fractions |
| 40 | 45.5 | 5 | Changing common fractions to decimals |
| 40 | 45.5 | 5 | Changing common fractions to per cents |
| 40 | 45.5 | 5 | Finding a number when a per cent of it is known |
| 40 | 45.5 | 5 | Changing per cents to common fractions |
| 40 | 45.5 | 5 | Area of square |
| 40 | 45.5 | 5 | Temperature conversion |
| 40 | 45.5 | 5 | Area of rectangle |
| 47 | 27.3 | 3 | Simple algebraic equation with one unknown |
| 48 | 18.2 | 2 | Measuring angles |
| 57.5 | 0 | 0 | Area of parallelogram |
| 57.5 | 0 | 0 | Area of circle using $A = \pi r^2$ |
| 57.5 | 0 | 0 | Acute and obtuse angles |
| 57.5 | 0 | 0 | Using pi $\pi$ |
| 57.5 | 0 | 0 | Area of trapezoid |
| 57.5 | 0 | 0 | Circumference using $C = \pi d = 2\pi r$ |
| 57.5 | 0 | 0 | Volume of cube |
| 57.5 | 0 | 0 | Area of triangle |
| 57.5 | 0 | 0 | Volume of rectangular solid |
| 57.5 | 0 | 0 | Area of circle |
| 57.5 | 0 | 0 | Volume of cylinder |
| 57.5 | 0 | 0 | Volume of sphere |
| 57.5 | 0 | 0 | Volume of cone |
| 57.5 | 0 | 0 | Square root |
| 57.5 | 0 | 0 | Micrometer reading |
| 57.5 | 0 | 0 | Squaring a number |
| 57.5 | 0 | 0 | Volume of pyramid |
| 57.5 | 0 | 0 | Finding length of unknown side of right triangle |

TABLE 88

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING CHILD DEVELOPMENT STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 88.9 | 8 | Finding what part one number is of another |
| 4 | 80 | 8 | Temperature conversion |
| 4 | 80 | 8 | Ratio and proportion |
| 4 | 80 | 8 | Multiplication, mixed numbers |
| 4 | 80 | 8 | Division, mixed numbers |
| 4 | 80 | 8 | Improper fractions, mixed numbers |
| 9 | 77.8 | 7 | Finding what per cent one number is of another |
| 9 | 77.8 | 7 | Finding a number when a per cent of it is known |
| 9 | 77.8 | 7 | Finding a number when a fractional part of it is known |
| 9 | 77.8 | 7 | Decimal equivalents |
| 9 | 77.8 | 7 | Subtraction, mixed numbers |
| 13.5 | 72.7 | 8 | Multiplication, fractions |
| 13.5 | 72.7 | 8 | Division, fractions |
| 13.5 | 72.7 | 8 | Comparing fractions |
| 13.5 | 72.7 | 8 | Reducing mixed numbers to simplest form |
| 18 | 70 | 7 | Multiplication of decimals |
| 18 | 70 | 7 | Division of decimals |
| 18 | 70 | 7 | Multiplying whole numbers and decimals by 10,100,etc. |
| 18 | 70 | 7 | Simple algebraic equation with one unknown |
| 18 | 70 | 7 | Measuring angles |
| 28 | 66.7 | 6 | Meaning of percentage |
| 28 | 66.7 | 6 | Changing per cent to decimals |
| 28 | 66.7 | 6 | Changing decimals to per cents |
| 28 | 66.7 | 6 | Changing per cents to common fractions |
| 28 | 66.7 | 6 | Changing common fractions to per cents |
| 28 | 66.7 | 6 | Acute and obtuse angles |
| 28 | 66.7 | 6 | Finding length of unknown side of right triangle |
| 28 | 66.7 | 6 | Volume of rectangular solid |
| 28 | 66.7 | 6 | Volume of cube |
| 28 | 66.7 | 6 | Volume of cylinder |
| 28 | 66.7 | 6 | Volume of sphere |
| 28 | 66.7 | 6 | Volume of cone |
| 28 | 66.7 | 6 | Volume of pyramid |
| 28 | 66.7 | 6 | Changing decimals to common fractions |
| 28 | 66.7 | 6 | Addition, mixed numbers |
| 36.5 | 63.6 | 7 | Addition, fractions |
| 36.5 | 63.6 | 7 | Subtraction, fractions |
| 38.5 | 62.5 | 5 | Squaring a number |
| 38.5 | 62.5 | 5 | Square root |
| 40 | 60 | 6 | Changing common fractions to decimals |
| 40 | 60 | 6 | Finding per cent of a number |
| 42 | 57.1 | 4 | Micrometer reading |
| 46 | 55.6 | 5 | Circumference using $C = \pi d = 2\pi r$ |
| 46 | 55.6 | 5 | Area of circle using $A = \pi r2$ |
| 46 | 55.6 | 5 | Area of triangle |
| 46 | 55.6 | 5 | Area of trapezoid |
| 46 | 55.6 | 5 | Area of circle |
| 46 | 55.6 | 5 | Dividing whole numbers and decimals by 10,100,etc. |
| 46 | 55.6 | 5 | Using pi $\pi$ |
| 50.5 | 54.5 | 6 | Area of rectangle |
| 50.5 | 54.5 | 6 | Area of square |
| 54 | 50 | 5 | Addition of decimals |
| 54 | 50 | 5 | Subtraction of decimals |
| 54 | 50 | 5 | Rounding off decimals |
| 54 | 50 | 5 | Area of parallelogram |
| 54 | 50 | 6 | Averages |
| 57.5 | 45.5 | 5 | Reading, writing decimals |
| 57.5 | 45.5 | 5 | Reading a rule |
| 59 | 41.7 | 5 | Liquid measure |
| 60 | 36.4 | 4 | Reducing fractions to lowest terms |
| 61 | 18.2 | 2 | Rounding numbers |
| 62 | 16.7 | 2 | Division, whole numbers |
| 63 | 8.3 | 1 | Reading large numbers |
| 65 | 8.3 | 1 | Addition, whole numbers |
| 65 | 8.3 | 1 | Subtraction, whole numbers |
| 65 | 8.3 | 1 | Multiplication, whole numbers |

TABLE 89

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF CLOTHING TEXTILES TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 93.5 | 87 | Addition, whole numbers |
| 2 | 89.1 | 82 | Addition, fractions |
| 3 | 88.2 | 82 | Subtraction, whole numbers |
| 4 | 84.8 | 78 | Subtraction, fractions |
| 5 | 77.2 | 71 | Division, whole numbers |
| 6 | 76.1 | 70 | Multiplication, whole numbers |
| 7 | 73.3 | 66 | Reducing fractions to lowest terms |
| 8 | 72.5 | 66 | Addition, mixed numbers |
| 9.5 | 70.3 | 64 | Subtraction, mixed numbers |
| 9.5 | 70.3 | 64 | Reading a rule |
| 11 | 67 | 61 | Reducing mixed numbers to simplest form |
| 12 | 66.3 | 61 | Multiplication, fractions |
| 13 | 62 | 57 | Division, fractions |
| 14 | 61.1 | 55 | Improper fractions, mixed numbers |
| 15 | 57.1 | 52 | Comparing fractions |
| 16 | 53.8 | 49 | Multiplication, mixed numbers |
| 17 | 52.7 | 48 | Meaning of percentage |
| 18 | 51.1 | 46 | Division, mixed numbers |
| 19.5 | 47.3 | 43 | Rounding numbers |
| 19.5 | 47.3 | 43 | Averages |
| 21 | 45.7 | 42 | Liquid measure |
| 22 | 41.9 | 39 | Reading large numbers |
| 23 | 38.9 | 35 | Ratio and proportion |
| 24 | 36.7 | 33 | Finding per cent of a number |
| 25 | 34.8 | 31 | Dividing whole numbers and decimals by 10, 100, etc. |
| 26.5 | 33.3 | 30 | Multiplying whole numbers and decimals by 10, 100,etc. |
| 26.5 | 33.3 | 30 | Finding what per cent one number is of another |
| 28 | 33 | 3 | Micrometer reading |
| 29 | 31.9 | 29 | Reading, writing decimals |
| 30 | 30.8 | 28 | Rounding off decimals |
| 31 | 30.3 | 27 | Finding what part one number is of another |
| 32 | 30.0 | 27 | Changing common fractions to per cents |
| 33.5 | 29.7 | 27 | Changing common fractions to decimals |
| 33.5 | 29.7 | 27 | Changing per cents to common fractions |
| 35 | 28.1 | 25 | Finding a number when a per cent of it is known |
| 36.5 | 26.7 | 24 | Changing decimals to per cents |
| 36.5 | 26.7 | 24 | Changing per cent to decimals |
| 38 | 26.4 | 24 | Changing decimals to common fractions |
| 40 | 25.6 | 23 | Subtraction of decimals |
| 40 | 25.6 | 23 | Measuring angles |
| 40 | 25.6 | 23 | Temperature conversion |
| 43 | 24.4 | 22 | Finding a number when a fractional part of it is known |
| 43 | 24.4 | 22 | Multiplication of decimals |
| 43 | 24.4 | 22 | Addition of decimals |
| 45 | 23.3 | 21 | Division of decimals |
| 46 | 22 | 20 | Decimal equivlanets |
| 47 | 20.2 | 18 | Area of square |
| 48 | 19.1 | 17 | Area of rectangle |
| 49 | 13.3 | 12 | Area of circle |
| 50 | 10.1 | 9 | Simple algebraic equation with one unknown |
| 51 | 10 | 9 | Squaring a number |
| 52 | 9 | 8 | Circumference using $C = \pi d$ $2\pi r$ |
| 53 | 7.9 | 7 | Area of circle using $A = \pi r^2$ |
| 54.5 | 6.7 | 6 | Area of parallelogram |
| 54.5 | 6.7 | 6 | Acute and obtuse angles |
| 56.5 | 5.6 | 5 | Square root |
| 56.5 | 5.6 | 5 | Area of triangle |
| 58 | 2.3 | 2 | Using pi $\pi$ |
| 60 | 2.2 | 2 | Area of trapezoid |
| 60 | 2.2 | 2 | Volume of cylinder |
| 60 | 2.2 | 2 | Volume of rectangular solid |
| 63 | 1.1 | 1 | Volume of sphere |
| 63 | 1.1 | 1 | Volume of cube |
| 63 | 1.1 | 1 | Volume of cone |
| 65.5 | 0 | 0 | Finding length of unknown side of right triangle |
| 65.5 | 0 | 0 | Volume of pyramid |

TABLE 90
RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING CLOTHING TEXTILES STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 68.3 | 56 | Reducing mixed numbers to simplest form |
| 2 | 66.7 | 54 | Improper fractions, mixed numbers |
| 3 | 64.7 | 44 | Ratio and proportion |
| 4 | 63.5 | 47 | Comparing fractions |
| 5 | 63.2 | 55 | Subtraction, fractions |
| 6 | 62.3 | 43 | Temperature conversion |
| 7.5 | 61 | 36 | Volume of cylinder |
| 7.5 | 61 | 36 | Volume of sphere |
| 9 | 60.2 | 53 | Addition, fractions |
| 10.5 | 60 | 39 | Finding a number when a fractional part of it is known |
| 10.5 | 60 | 48 | Division, fractions |
| 12.5 | 59.3 | 35 | Volume of cone |
| 12.5 | 59.3 | 35 | Volume of pyramid |
| 14.5 | 59 | 36 | Square root |
| 14.5 | 59 | 36 | Micrometer reading |
| 16 | 58 | 47 | Multiplication, fractions |
| 18.5 | 57.6 | 34 | Volume of rectangular solid |
| 18.5 | 57.6 | 34 | Volume of cube |
| 18.5 | 57.6 | 34 | Finding length of unknown side of right triangle |
| 18.5 | 57.6 | 34 | Area of trapezoid |
| 21 | 57.4 | 39 | Finding what part one number is of another |
| 22 | 57 | 45 | Reducing fractions to lowest terms |
| 23 | 55.9 | 38 | Finding a number when a per cent of it is known |
| 24 | 55.2 | 32 | Area of triangle |
| 25 | 55 | 33 | Using pi $\pi$ |
| 26 | 54.4 | 43 | Multiplication, mixed numbers |
| 27 | 54.2 | 32 | Area of parallelogram |
| 28 | 54.1 | 45 | Subtraction, mixed numbers |
| 29 | 54 | 34 | Simple algebraic equation with one unknown |
| 30 | 53.9 | 41 | Division, mixed numbers |
| 31 | 53.7 | 44 | Addition, mixed numbers |
| 32.5 | 53.3 | 32 | Acute and obtuse angles |
| 32.5 | 53.3 | 32 | Circumference using $C=\pi d=2\pi r$ |
| 34 | 53.1 | 43 | Reading a rule |
| 35.5 | 52.5 | 32 | Area of circle using $A=\pi r2$ |
| 35.5 | 52.5 | 32 | Squaring a number |
| 37 | 52.4 | 33 | Area of circle |
| 38 | 52.2 | 36 | Finding what per cent one number is of another |
| 39 | 52.1 | 37 | Finding per cent of a number |
| 40 | 50.7 | 35 | Changing decimals to common fractions |
| 41.5 | 49.3 | 33 | Decimal equivalents |
| 41.5 | 49.3 | 34 | Changing common fractions to per cents |
| 43 | 49.2 | 32 | Measuring angles |
| 44 | 48.6 | 34 | Changing decimals to per cents |
| 45 | 48.5 | 33 | Changing per cents to common fractions |
| 46 | 47.1 | 32 | Changing common fractions to decimals |
| 47 | 46.4 | 32 | Changing per cent to decimals |
| 48.5 | 43.8 | 28 | Area of rectangle |
| 48.5 | 43.8 | 28 | Area of square |
| 50.5 | 42.9 | 30 | Reading, writing decimals |
| 50.5 | 42.9 | 30 | Rounding off decimals |
| 52 | 38.4 | 28 | Meaning of percentage |
| 53 | 36.4 | 24 | Division of decimals |
| 54 | 35.5 | 27 | Liquid measure |
| 55 | 35.1 | 27 | Averages |
| 56 | 31.3 | 21 | Multiplication of decimals |
| 57 | 30 | 21 | Dividing whole numbers and decimals by 10,100,etc. |
| 58 | 29 | 20 | Multiplying whole numbers and decimals by 10,100,etc. |
| 59 | 28.4 | 19 | Subtraction of decimals |
| 60 | 27.3 | 18 | Addition of decimals |
| 61 | 26.2 | 21 | Division, whole numbers |
| 62 | 23.7 | 18 | Rounding numbers |
| 63 | 23.5 | 19 | Multiplication, whole numbers |
| 64 | 19.7 | 15 | Reading large numbers |
| 65 | 19.3 | 16 | Subtraction, whole numbers |
| 66 | 13.1 | 11 | Addition, whole numbers |

TABLE 91

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF COMPREHENSIVE HOME ECONOMICS TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 100 | 77 | Addition, whole numbers |
| 2.5 | 98.7 | 77 | Micrometer reading |
| 2.5 | 98.7 | 77 | Reading a rule |
| 4 | 97.4 | 75 | Subtraction, whole numbers |
| 5 | 96.1 | 74 | Reading, writing decimals |
| 6 | 93.5 | 72 | Multiplication, whole numbers |
| 7 | 92.3 | 72 | Subtraction of decimals |
| 8 | 91 | 71 | Addition of decimals |
| 9 | 90.9 | 70 | Changing common fractions to decimals |
| 10.5 | 89.6 | 69 | Liquid measure |
| 10.5 | 89.6 | 69 | Decimal equivalents |
| 12 | 88.3 | 68 | Division, whole numbers |
| 13.5 | 88.2 | 67 | Rounding off decimals |
| 13.5 | 88.2 | 67 | Addition, fractions |
| 15 | 84.0 | 65 | Meaning of percentage |
| 16 | 84.2 | 64 | Subtraction, fractions |
| 17 | 83.1 | 64 | Ratio and proportion |
| 18 | 81.8 | 63 | Reducing fractions to lowest terms |
| 19 | 79.2 | 61 | Changing decimals to common fractions |
| 20 | 78.9 | 60 | Comparing fractions |
| 21 | 78.2 | 61 | Volume of cylinder |
| 22 | 76.3 | 58 | Averages |
| 23.5 | 76 | 57 | Reading large numbers |
| 23.5 | 76 | 57 | Rounding numbers |
| 25 | 75.3 | 58 | Multiplying whole numbers and decimals by 10, 100, etc. |
| 26 | 74 | 57 | Multiplication of decimals |
| 27 | 71.1 | 54 | Finding per cent of a number |
| 28 | 70.7 | 53 | Addition, mixed numbers |
| 29 | 69.3 | 52 | Dividing whole numbers and decimals by 10,100, etc. |
| 30 | 68 | 51 | Subtraction, mixed numbers |
| 31 | 68.4 | 52 | Multiplication, fractions |
| 32 | 67.1 | 51 | Division, fractions |
| 33 | 66.7 | 50 | Reducing mixed numbers to simplest form |
| 34 | 66.2 | 51 | Changing decimals to per cents |
| 35.5 | 64.9 | 50 | Changing per cent to decimals |
| 35.5 | 64.9 | 50 | Division of decimals |
| 37 | 61.8 | 47 | Area of circle using $A = \pi r^2$ |
| 38 | 60 | 45 | Multiplication, mixed numbers |
| 39.5 | 59.2 | 45 | Finding what per cent one number is of another |
| 39.5 | 59.2 | 45 | Area of circle |
| 41 | 58.1 | 43 | Improper fractions, mixed numbers |
| 42 | 57.9 | 44 | Temperature conversion |
| 43 | 56.8 | 42 | Division, mixed numbers |
| 44 | 56.6 | 43 | Changing common fractions to per cents |
| 45 | 55.8 | 43 | Using $\pi$ |
| 46 | 55.3 | 42 | Measuring angles |
| 47 | 53.9 | 41 | Circumference using $C = \pi d = 2\pi r$ |
| 48 | 50.6 | 39 | Changing per cents to common fractions |
| 49 | 43.1 | 31 | Finding a number when a per cent of it is known |
| 50.5 | 42.5 | 31 | Finding what part one number is of another |
| 50.5 | 42.5 | 31 | Finding a number when a fractional part of it is known |
| 52 | 40.3 | 31 | Squaring a number |
| 53.5 | 34.7 | 26 | Volume of cube |
| 53.5 | 34.7 | 26 | Simple algebraic equation with one unknown |
| 55 | 28 | 21 | Area of square |
| 56 | 22.7 | 17 | Square root |
| 57 | 21.3 | 16 | Area of rectangle |
| 58 | 18.3 | 13 | Volume of rectangular solid |
| 59 | 17.3 | 13 | Area of parallelogram |
| 61 | 16 | 12 | Acute and obtuse angles |
| 61 | 16 | 12 | Volume of sphere |
| 61 | 16 | 12 | Finding length of unknown side of right triangle |
| 63 | 10.7 | 8 | Area of triangle |
| 64.5 | 8.1 | 6 | Volume of pyramid |
| 64.5 | 8.1 | 6 | Volume of cone |
| 66 | 4 | 3 | Area of trapezoid |

TABLE 92

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING COMPREHENSIVE HOME ECONOMICS STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 69.2 | 99 | Ratio and proportion |
| 2 | 69.1 | 112 | Division, fractions |
| 3 | 68.3 | 110 | Multiplication, fractions |
| 4 | 66.4 | 89 | Volume of cylinder |
| 5.5 | 66.2 | 86 | Volume of cube |
| 5.5 | 66.2 | 88 | Volume of rectangular solid |
| 7 | 66.1 | 84 | Volume of sphere |
| 8 | 65.4 | 83 | Volume of pyramid |
| 9 | 65 | 89 | Temperature conversion |
| 10 | 64.8 | 83 | Volume of cone |
| 11 | 64.2 | 111 | Addition, fractions |
| 12 | 64.1 | 84 | Area of circle using $A = \pi r^2$ |
| 13.5 | 63.6 | 84 | Circumference using $C = \pi d = 2\pi r$ |
| 13.5 | 63.6 | 82 | Square root |
| 15 | 63.3 | 88 | Finding a number when a fractional part of it is known |
| 17 | 63 | 80 | Micrometer reading |
| 17 | 63 | 85 | Area of circle |
| 17 | 63 | 92 | Finding a number when a per cent of it is known |
| 19 | 62.7 | 84 | Simple algebraic equation with one unknown |
| 20.5 | 62.3 | 91 | Finding what part one number is of another |
| 20.5 | 62.3 | 96 | Improper fractions, mixed numbers |
| 22 | 62.1 | 105 | Subtraction, fractions |
| 23.5 | 61.9 | 96 | Reducing mixed numbers to simplest form |
| 23.5 | 61.9 | 83 | Finding length of unknown side of right triangle |
| 25 | 61.8 | 81 | Using pi $\pi$ |
| 26 | 61.6 | 85 | Measuring angles |
| 27 | 61.5 | 80 | Area of trapezoid |
| 28 | 60.9 | 98 | Division, mixed numbers |
| 29 | 60.8 | 87 | Changing common fractions to per cents |
| 30.5 | 60.7 | 99 | Reducing fractions to lowest terms |
| 30.5 | 60.7 | 88 | Changing per cents to common fractions |
| 32 | 60.6 | 80 | Acute and obtuse angles |
| 33 | 60.5 | 92 | Finding what per cent one number is of another |
| 34 | 59.7 | 89 | Comparing fractions |
| 35 | 59.4 | 92 | Finding per cent of a number |
| 36.5 | 59.1 | 94 | Multiplication, mixed numbers |
| 36.5 | 59.1 | 78 | Area of parallelogram |
| 38 | 58.9 | 96 | Subtraction, mixed numbers |
| 39 | 58.2 | 92 | Reading a rule |
| 40 | 58 | 83 | Changing common fractions to decimals |
| 41 | 57.9 | 77 | Area of triangle |
| 42 | 56.5 | 78 | Changing decimals to common fractions |
| 43 | 56.4 | 93 | Addition, mixed numbers |
| 44 | 55.6 | 80 | Changing decimals to per cents |
| 45 | 55.5 | 81 | Changing per cent to decimals |
| 46 | 55.3 | 73 | Squaring a number |
| 47 | 52 | 79 | Area of rectangle |
| 48 | 51.8 | 72 | Decimal equivalents |
| 49 | 50 | 75 | Area of square |
| 50 | 49.4 | 79 | Meaning of percentage |
| 51 | 44.1 | 64 | Rounding off decimals |
| 52 | 43.8 | 64 | Multiplication of decimals |
| 53 | 42.8 | 68 | Averages |
| 54 | 41.8 | 61 | Division of decimals |
| 55 | 40.7 | 68 | Liquid measure |
| 56 | 40.5 | 60 | Reading, writing decimals |
| 57 | 37.2 | 54 | Subtraction of decimals |
| 58 | 36.6 | 53 | Addition of decimals |
| 59 | 36.2 | 51 | Dividing whole numbers and decimals by 10, 100, etc. |
| 60 | 31.7 | 46 | Multiplying whole numbers and decimals by 10, 100, etc. |
| 61 | 29.7 | 51 | Division, whole numbers |
| 62 | 29.2 | 45 | Rounding numbers |
| 63 | 23.7 | 40 | Multiplication, whole numbers |
| 64 | 22.7 | 35 | Reading large numbers |
| 65 | 13.9 | 24 | Subtraction, whole numbers |
| 66 | 11.6 | 20 | Addition, whole numbers |

TABLE 93

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF CONSUMER EDUCATION TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1.5 | 100 | 17 | Addition, whole numbers |
| 1.5 | 100 | 17 | Subtraction, whole numbers |
| 4 | 94.1 | 16 | Division, whole numbers |
| 4 | 94.1 | 16 | Reading, writing decimals |
| 4 | 94.1 | 16 | Multiplication, whole numbers |
| 6.5 | 88.2 | 15 | Rounding off decimals |
| 6.5 | 88.2 | 15 | Meaning of percentage |
| 8.5 | 82.4 | 14 | Subtraction of decimals |
| 8.5 | 82.4 | 14 | Addition of decimals |
| 10 | 76.5 | 13 | Multiplication of decimals |
| 12 | 75 | 12 | Changing decimals to per cents |
| 12 | 75 | 12 | Finding per cent of a number |
| 12 | 75 | 12 | Changing per cent to decimals |
| 14.5 | 70.6 | 12 | Division of decimals |
| 14.5 | 70.6 | 12 | Averages |
| 16 | 64.7 | 11 | Liquid measure |
| 18 | 58.8 | 10 | Comparing fractions |
| 18 | 58.8 | 10 | Subtraction, fractions |
| 18 | 58.8 | 10 | Addition, fractions |
| 20 | 58.5 | 10 | Changing common fractions to decimals |
| 21.5 | 56.3 | 9 | Dividing whole numbers and decimals by 10, 100, etc. |
| 21.5 | 56.3 | 9 | Multiplying whole numbers and decimals by 10,100,etc |
| 28.5 | 52.9 | 9 | Division, mixed numbers |
| 28.5 | 52.9 | 10 | Multiplication, fractions |
| 28.5 | 52.9 | 9 | Rounding numbers |
| 28.5 | 52.9 | 9 | Reducing fractions to lowest terms |
| 28.5 | 52.9 | 9 | Improper fractions, mixed numbers |
| 28.5 | 52.9 | 9 | Multiplication, mixed numbers |
| 28.5 | 52.9 | 9 | Subtraction, mixed numbers |
| 28.5 | 52.9 | 9 | Changing decimals to common fractions |
| 28.5 | 52.9 | 9 | Division, fractions |
| 28.5 | 52.9 | 9 | Addition, mixed numbers |
| 28.5 | 52.9 | 9 | Finding what per cent one number is of another |
| 28.5 | 52.9 | 9 | Finding a number when a fractional part of it is known |
| 35 | 50 | 8 | Reducing mixed numbers to simplest form |
| 37 | 47.1 | 8 | Decimal equivalents |
| 37 | 47.1 | 8 | Finding what part one number is of another |
| 37 | 47.1 | 8 | Finding a number when a per cent of it is known |
| 39.5 | 43.8 | 7 | Changing per cents to common fractions |
| 39.5 | 43.8 | 7 | Changing common fractions to per cents |
| 41.5 | 41.2 | 7 | Ratio and proportion |
| 41.5 | 41.2 | 7 | Reading large numbers |
| 43.5 | 35.3 | 6 | Simple algebraic equation with one unknown |
| 43.5 | 35.3 | 6 | Reading a rule |
| 45.5 | 23.5 | 4 | Area of rectangle |
| 45.5 | 23.5 | 4 | Area of square |
| 47 | 17.6 | 3 | Temperature conversion |
| 50 | 11.8 | 2 | Area of circle |
| 50 | 11.8 | 2 | Volume of rectangular solid |
| 50 | 11.8 | 2 | Volume of cube |
| 50 | 11.8 | 2 | Squaring a number |
| 50 | 11.8 | 2 | Square root |
| 53.5 | 5.9 | 1 | Measuring angles |
| 53.5 | 5.9 | 1 | Area of triangle |
| 60.5 | 0 | 0 | Circumference using $C = \pi d = 2\pi r$ |
| 60.5 | 0 | 0 | Volume of cylinder |
| 60.5 | 0 | 0 | Volume of cone |
| 60.5 | 0 | 0 | Area of circle using $A = \pi r^2$ |
| 60.5 | 0 | 0 | Using pi ($\pi$) |
| 60.5 | 0 | 0 | Volume of sphere |
| 60.5 | 0 | 0 | Volume of pyramid |
| 60.5 | 0 | 0 | Micrometer reading |
| 60.5 | 0 | 0 | Finding length of unknown side of right triangle |
| 60.5 | 0 | 0 | Acute and obtuse angles |
| 60.5 | 0 | 0 | Area of parallelogram |
| 60.5 | 0 | 0 | Area of trapezoid |

TABLE 94

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING CONSUMER EDUCATION STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 71.4 | 10 | Finding a number when a fractional part of it is known |
| 2 | 68.8 | 11 | Finding per cent of a number |
| 4 | 66.7 | 8 | Simple algebraic equation with one unknown |
| 4 | 66.7 | 10 | Changing per cent to decimals |
| 4 | 66.7 | 10 | Changing decimals to per cents |
| 6 | 64.3 | 9 | Comparing fractions |
| 7.5 | 60 | 9 | Improper fractions, mixed numbers |
| 7.5 | 60 | 9 | Division, mixed numbers |
| 9 | 58.8 | 10 | Meaning of percentage |
| 10 | 57.1 | 8 | Reducing mixed numbers to simplest form |
| 18 | 56.3 | 9 | Division of decimals |
| 18 | 56.3 | 9 | Rounding off decimals |
| 18 | 54.5 | 6 | Area of trapezoid |
| 18 | 54.5 | 6 | Temperature conversion |
| 18 | 54.5 | 6 | Volume of rectangular solid |
| 18 | 54.5 | 6 | Volume of cube |
| 18 | 54.5 | 6 | Volume of cylinder |
| 18 | 54.5 | 6 | Volume of sphere |
| 18 | 54.5 | 6 | Volume of cone |
| 18 | 54.5 | 6 | Volume of pyramid |
| 18 | 54.5 | 6 | Using pi ($\pi$) |
| 18 | 54.5 | 6 | Circumference using $C = \pi d = 2\pi r$ |
| 18 | 54.5 | 6 | Area of circle using $A = \pi r^2$ |
| 18 | 54.5 | 6 | Area of rectangle |
| 18 | 54.5 | 6 | Area of square |
| 26.5 | 53.8 | 7 | Ratio and proportion |
| 26.5 | 53.8 | 7 | Finding what part one number is of another |
| 30 | 53.3 | 8 | Subtraction, mixed numbers |
| 30 | 53.3 | 8 | Multiplication, mixed numbers |
| 30 | 53.3 | 8 | Division, fractions |
| 30 | 53.3 | 8 | Reducing fractions to lowest terms |
| 30 | 53.3 | 8 | Finding what per cent one number is of another |
| 36 | 50 | 7 | Changing per cents to common fractions |
| 36 | 50 | 7 | Changing common fractions to per cents |
| 36 | 50 | 7 | Finding a number when a per cent of it is known |
| 36 | 50 | 8 | Addition, fractions |
| 36 | 50 | 8 | Subtraction, fractions |
| 36 | 50 | 6 | Reading a rule |
| 36 | 50 | 8 | Changing common fractions to decimals |
| 41.5 | 47.1 | 8 | Reading, writing decimals |
| 41.5 | 46.7 | 7 | Multiplication, fractions |
| 41.5 | 46.7 | 7 | Changing decimals to common fractions |
| 41.5 | 46.7 | 7 | Addition, mixed numbers |
| 47.5 | 45.5 | 5 | Measuring angles |
| 47.5 | 45.5 | 5 | Acute and obtuse angles |
| 47.5 | 45.5 | 5 | Finding length of unknown side of right triangle |
| 47.5 | 45.5 | 5 | Area of parallelogram |
| 47.5 | 45.5 | 5 | Area of triangle |
| 47.5 | 45.5 | 5 | Reading large numbers |
| 47.5 | 45.5 | 5 | Area of circle |
| 47.5 | 45.5 | 5 | Micrometer reading |
| 52.5 | 43.8 | 7 | Multiplication of decimals |
| 52.5 | 43.8 | 7 | Decimal equivalents |
| 54.5 | 42.9 | 6 | Dividing whole numbers and decimals by 10, 100, etc. |
| 54.5 | 42.9 | 6 | Rounding numbers |
| 56 | 38.5 | 5 | Liquid measure |
| 57.5 | 36.4 | 4 | Squaring a number |
| 57.5 | 36.4 | 4 | Square root |
| 59 | 35.7 | 5 | Multiplying whole numbers and decimals by 10, 100, etc. |
| 60.5 | 35.3 | 6 | Addition of decimals |
| 60.5 | 35.3 | 6 | Subtraction of decimals |
| 62 | 31.3 | 5 | Averages |
| 63.5 | 17.6 | 3 | Addition, whole numbers |
| 63.5 | 17.6 | 3 | Division, whole numbers |
| 65.5 | 11.8 | 2 | Subtraction, whole numbers |
| 65.5 | 11.8 | 2 | Multiplication, whole numbers |

TABLE 95

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF FAMILY RELATIONS TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 95 | 9 | Changing decimals to common fractions |
| 2.5 | 80 | 16 | Addition, whole numbers |
| 2.5 | 80 | 16 | Subtraction, whole numbers |
| 4 | 78.9 | 15 | Meaning of percentage |
| 6 | 75 | 15 | Multiplication, whole numbers |
| 6 | 75 | 15 | Division, whole numbers |
| 6 | 75 | 15 | Averages |
| 8 | 68.4 | 13 | Reading, writing decimals |
| 9 | 63.2 | 12 | Finding per cent of a number |
| 10 | 60 | 12 | Addition, fractions |
| 11.5 | 57.9 | 11 | Dividing whole numbers and decimals by 10, 100, etc. |
| 11.5 | 57.9 | 11 | Rounding off decimals |
| 13 | 55 | 11 | Subtraction, fractions |
| 17 | 52.6 | 10 | Addition, mixed numbers |
| 17 | 52.6 | 10 | Subtraction, mixed numbers |
| 17 | 52.6 | 10 | Liquid measure |
| 17 | 52.6 | 10 | Reading a rule |
| 17 | 52.6 | 10 | Multiplying whole numbers and decimals by 10, 100,etc |
| 17 | 52.6 | 10 | Changing per cent to decimals |
| 17 | 52.6 | 10 | Changing decimals to per cents |
| 23 | 50 | 10 | Addition of decimals |
| 23 | 50 | 10 | Subtraction of decimals |
| 23 | 50 | 10 | Multiplication of decimals |
| 23 | 50 | 10 | Reading large numbers |
| 23 | 50 | 10 | Rounding numbers |
| 26.5 | 47.4 | 9 | Finding what per cent one number is of another |
| 26.5 | 47.4 | 9 | Changing common fractions to decimals |
| 29.5 | 45 | 9 | Multiplication, fractions |
| 29.5 | 45 | 9 | Division, fractions |
| 29.5 | 45 | 9 | Changing common fractions to per cents |
| 29.5 | 45 | 9 | Division of decimals |
| 33.5 | 42.1 | 8 | Multiplication, mixed numbers |
| 33.5 | 42.1 | 8 | Division, mixed numbers |
| 33.5 | 42.1 | 8 | Changing per cents to common fractions |
| 33.5 | 42.1 | 8 | Finding a number when a per cent of it is known |
| 36 | 40 | 8 | Comparing fractions |
| 38 | 35 | 7 | Reducing fractions to lowest terms |
| 38 | 35 | 7 | Improper fractions mixed numbers |
| 38 | 35 | 7 | Reducing mixed numbers to simplest form |
| 40.5 | 31.6 | 6 | Area of rectangle |
| 40.5 | 31.6 | 6 | Area of square |
| 42 | 30 | 6 | Ratio and proportion |
| 43 | 27.8 | 5 | Finding what part one number is of another |
| 44 | 26.3 | 5 | Temperature conversion |
| 45 | 25 | 5 | Decimal equivalents |
| 46 | 21.1 | 4 | Simple algebraic equation with one unknown |
| 48.5 | 15.8 | 3 | Area of triangle |
| 48.5 | 15.8 | 3 | Measuring angles |
| 48.5 | 15.8 | 3 | Area of circle |
| 48.5 | 15.8 | 3 | Finding a number when fractional part of it is known |
| 52.5 | 10.5 | 2 | Area of trapezoid |
| 52.5 | 10.5 | 2 | Area of circle using A = $\pi$r2 |
| 52.5 | 10.5 | 2 | Using pi $\pi$ |
| 52.5 | 10.5 | 2 | Area of parallelogram |
| 58.5 | 5.3 | 1 | Volume of rectangular solid |
| 58.5 | 5.3 | 1 | Volume of cube |
| 58.5 | 5.3 | 1 | Volume of cylinder |
| 58.5 | 5.3 | 1 | Volume of sphere |
| 58.5 | 5.3 | 1 | Volume of cone |
| 58.5 | 5.3 | 1 | Acute and obtuse angles |
| 58.5 | 5,3 | 1 | Finding length of unknown side of right triangle |
| 58.5 | 5.3 | 1 | Circumference using C = $\pi$d = 2 $\pi$ r |
| 64.5 | 0 | 0 | Squaring a number |
| 64.5 | 0 | 0 | Square root |
| 64.5 | 0 | 0 | Volume of pyramid |
| 64.5 | 0 | 0 | Micrometer reading |

TABLE 96

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING FAMILY RELATIONS STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 76.9 | 10 | Area of circle using A = $\pi r^2$ |
| 2 | 75 | 9 | Circumference using C = $\pi d$ = $2\pi r$ |
| 5 | 71.4 | 10 | Area of rectangle |
| 5 | 71.4 | 10 | Area of square |
| 5 | 71.4 | 10 | Area of parallelogram |
| 5 | 71.4 | 10 | Area of triangle |
| 5 | 71.4 | 10 | Temperature conversion |
| 11.5 | 69.2 | 9 | Finding what part one number is of another |
| 11.5 | 69.2 | 9 | Using pi $\pi$ |
| 11.5 | 69.2 | 9 | Area of circle |
| 11.5 | 69.2 | 9 | Volume of rectangular solid |
| 11.5 | 69.2 | 9 | Volume of cube |
| 11.5 | 69.2 | 9 | Volume of sphere |
| 11.5 | 69.2 | 9 | Volume of cone |
| 11.5 | 69.2 | 9 | Measuring angles |
| 16.5 | 68.8 | 11 | Finding per cent of a number |
| 16.5 | 68.8 | 11 | Finding what per cent one number is of another |
| 19 | 66.7 | 10 | Decimal equivalents |
| 19 | 66.7 | 8 | Volume of pyramid |
| 19 | 66.7 | 8 | Finding a number when a fractional part of it is known |
| 21.5 | 64.3 | 9 | Area of trapezoid |
| 21.5 | 64.3 | 9 | Ratio and proportion |
| 23 | 62.9 | 9 | Volume of cylinder |
| 24.5 | 62.5 | 10 | Changing common fractions to per cents |
| 24.5 | 62.5 | 10 | Finding a number when a per cent of it is known |
| 26.5 | 61.5 | 8 | Simple algebraic equation with one unknown |
| 26.5 | 61.5 | 8 | Acute and obtuse angles |
| 28 | 60 | 9 | Changing per cents to common fractions |
| 29.5 | 58.3 | 7 | Micrometer reading |
| 29.5 | 58.3 | 7 | Square root |
| 31.5 | 56.3 | 9 | Changing per cent to decimals |
| 31.5 | 56.3 | 9 | Changing decimals to per cents |
| 33 | 53.6 | 9 | Changing common fractions to decimals |
| 36 | 50 | 8 | Changing decimals to common fractions |
| 36 | 50 | 6 | Squaring a number |
| 36 | 50 | 8 | Improper fractions, mixed numbers |
| 36 | 50 | 8 | Reducing mixed numbers to simplest form |
| 36 | 50 | 6 | Finding length of unknown side of right triangle |
| 39.5 | 47.1 | 8 | Addition, fractions |
| 39.5 | 47.1 | 8 | Subtraction, fractions |
| 43 | 46.7 | 7 | Multiplication, fractions |
| 43 | 46.7 | 7 | Division, fractions |
| 43 | 46.7 | 7 | Comparing fractions |
| 43 | 46.7 | 7 | Division, mixed numbers |
| 43 | 46.7 | 7 | Rounding off decimals |
| 46 | 43.8 | 7 | Reading, writing decimals |
| 47 | 42.9 | 6 | Multiplication, mixed numbers |
| 49 | 40 | 6 | Addition, mixed numbers |
| 49 | 40 | 6 | Subtraction, mixed numbers |
| 49 | 40 | 6 | Reading a rule |
| 52 | 37.5 | 6 | Meaning of percentage |
| 52 | 37.5 | 6 | Liquid measure |
| 52 | 37.5 | 6 | Reducing fractions to lowest terms |
| 54 | 33.3 | 5 | Dividing whole numbers and decimals by 10,100,etc. |
| 55.5 | 29.4 | 5 | Division, whole numbers |
| 55.5 | 29.4 | 5 | Averages |
| 57 | 26.7 | 4 | Multiplying whole numbers and decimals by 10,100,etc. |
| 60.5 | 25 | 4 | Multiplication, whole numbers |
| 60.5 | 25 | 4 | Rounding numbers |
| 60.5 | 25 | 4 | Addition of decimals |
| 60.5 | 25 | 4 | Subtraction of decimals |
| 60.5 | 25 | 4 | Multiplication of decimals |
| 60.5 | 25 | 4 | Division of decimals |
| 64 | 23.5 | 4 | Reading large numbers |
| 65 | 18.8 | 3 | Subtraction, whole numbers |
| 66 | 17.6 | 3 | Addition, whole numbers |

TABLE 97

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF FOOD AND NUTRITION TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY*

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 99.3 | 144 | Liquid measure |
| 2 | 97.9 | 140 | Addition, whole numbers |
| 3 | 95.2 | 138 | Division, whole numbers |
| 4 | 94.4 | 135 | Subtraction, whole numbers |
| 5 | 93 | 133 | Addition, fractions |
| 6 | 92.4 | 133 | Multiplication, whole numbers |
| 7 | 84.6 | 122 | Subtraction, fractions |
| 8 | 83.1 | 118 | Multiplication, fractions |
| 9 | 80.6 | 116 | Division, fractions |
| 10 | 75.4 | 107 | Addition, mixed numbers |
| 11 | 73.6 | 106 | Reducing fractions to lowest terms |
| 12 | 71.8 | 102 | Subtraction, mixed numbers |
| 13 | 68.5 | 98 | Meaning of percentage |
| 14 | 67.1 | 96 | Multiplication, mixed numbers |
| 15 | 66 | 95 | Division, mixed numbers |
| 16 | 60.6 | 86 | Reducing mixed numbers to simplest form |
| 17 | 59.6 | 84 | Finding per cent of a number |
| 18 | 59.2 | 84 | Averages |
| 19 | 58.9 | 83 | Improper fractions, mixed numbers |
| 20 | 57 | 81 | Comparing fractions |
| 21 | 55.1 | 76 | Rounding numbers |
| 22 | 55 | 77 | Reading a rule |
| 23 | 49.6 | 70 | Temperature conversion |
| 24 | 48.2 | 68 | Reading, writing decimals |
| 25 | 45 | 63 | Ratio and proportion |
| 26 | 44.3 | 62 | Addition of decimals |
| 27.5 | 42.9 | 60 | Multiplying whole numbers and decimals by 10,100,etc. |
| 27.5 | 42.9 | 60 | Dividing whole numbers and decimals by 10,100, etc. |
| 29 | 42.1 | 59 | Rounding off decimals |
| 30 | 42 | 58 | Changing per cent to decimals |
| 31 | 41.7 | 58 | Changing common fractions to per cents |
| 32 | 41.3 | 57 | Reading large numbers |
| 33 | 41 | 57 | Changing percents to common fractions |
| 34 | 40 | 56 | Subtraction of decimals |
| 35 | 40.6 | 56 | Changing decimals to per cents |
| 36 | 39.6 | 55 | Changing common fractions to decimals |
| 37 | 39.1 | 55 | Finding what per cent one number is of another |
| 38 | 37.9 | 53 | Multiplication of decimals |
| 39 | 37.1 | 52 | Division of decimals |
| 40 | 34.8 | 48 | Finding what part one number is of another |
| 41 | 32.1 | 45 | Changing decimals to common fractions |
| 42 | 31.7 | 44 | Finding a number when a fractional part of it is known |
| 43 | 30.7 | 43 | Area of square |
| 44 | 30.4 | 42 | Decimal equivalents |
| 45 | 29.5 | 41 | Finding a number when a per cent of it is known |
| 46 | 29.3 | 41 | Area of rectangle |
| 47 | 18.6 | 26 | Area of circle |
| 48 | 13.7 | 19 | Simple algebraic equation with one unknown |
| 49 | 12.9 | 18 | Volume of rectangular solid |
| 50 | 11.4 | 16 | Volume of cylinder |
| 51 | 10.1 | 14 | Measuring angles |
| 52 | 10.0 | 14 | Area of triangle |
| 53 | 9.3 | 13 | Volume of cube |
| 54 | 8.7 | 12 | Squaring a number |
| 55 | 7.1 | 10 | Area of parallelogram |
| 56 | 6.5 | 9 | Acute and obtuse angles |
| 57 | 6.4 | 9 | Area of trapezoid |
| 58 | 5.1 | 7 | Volume of cone |
| 59.5 | 5.0 | 7 | Area of circle using $A = \pi r^2$ |
| 59.5 | 5.0 | 7 | Volume of sphere |
| 61 | 4.3 | 6 | Circumference using $C = \pi d = 2\pi r$ |
| 62 | 4.3 | 6 | Using pi $\pi$ |
| 63 | 2.9 | 4 | Square root |
| 64 | 2.2 | 3 | Finding length of unknown side of right triangle |
| 65.5 | 1.4 | 2 | Volume of pyramid |
| 65.5 | 1.4 | 2 | Micrometer reading |

TABLE 96

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING FOOD AND NUTRITION STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 74.1 | 100 | Division, fractions |
| 2 | 73.2 | 104 | Addition, fractions |
| 3 | 72.9 | 97 | Multiplication, fractions |
| 4 | 70.6 | 96 | Subtraction, fractions |
| 5 | 70.2 | 80 | Ratio and proportion |
| 6 | 70 | 84 | Temperature conversion |
| 7 | 68.8 | 86 | Comparing fractions |
| 8 | 66.9 | 85 | Division, mixed numbers |
| 9 | 66.1 | 84 | Multiplication, mixed numbers |
| 10 | 65.2 | 86 | Addition, mixed numbers |
| 11 | 64.8 | 83 | Subtraction, mixed numbers |
| 12.5 | 62.7 | 79 | Reducing mixed numbers to simplest form |
| 12.5 | 62.7 | 84 | Reducing fractions to lowest terms |
| 14 | 62.5 | 75 | Finding per cent of a number |
| 15 | 62.2 | 69 | Finding a number when a fractional part of it is known |
| 16 | 62.1 | 77 | Improper fractions, mixed numbers |
| 17 | 60.7 | 71 | Changing common fractions to decimals |
| 18 | 60.5 | 69 | Finding a number when a per cent of it is known |
| 19 | 59.8 | 61 | Micrometer reading |
| 20 | 59.1 | 68 | Changing common fractions to per cents |
| 21 | 58.7 | 64 | Simple algebraic equation with one unknown |
| 22 | 58.4 | 66 | Changing per cent to decimals |
| 23.5 | 58.3 | 70 | Reading a rule |
| 23.5 | 58.3 | 67 | Changing per cents to common fractions |
| 25 | 57.9 | 66 | Finding what per cent one number is of another |
| 26 | 57.8 | 63 | Finding what part one number is of another |
| 27 | 56.9 | 70 | Meaning of percentage |
| 28 | 56.6 | 60 | Volume of cylinder |
| 29 | 56.3 | 58 | Square root |
| 30.5 | 56.2 | 59 | Area of circle using $A = \pi r^2$ |
| 30.5 | 56.2 | 59 | Volume of cone |
| 32 | 55.8 | 58 | Volume of pyramid |
| 33 | 55.5 | 66 | Reading, writing decimals |
| 34 | 55.2 | 58 | Volume of sphere |
| 35 | 55 | 60 | Volume of rectangular solid |
| 36 | 54.9 | 62 | Changing decimals to common fractions |
| 37.5 | 54.7 | 58 | Finding length of unknown side of right triangle |
| 37.5 | 54.7 | 58 | Using pi $\pi$ |
| 40 | 54.3 | 57 | Area of trapezoid |
| 40 | 54.3 | 57 | Circumference using $C = \pi d = 2\pi r$ |
| 40 | 54.3 | 57 | Area of parallelogram |
| 42 | 54.2 | 58 | Area of circle |
| 43 | 54 | 61 | Changing decimals to per cents |
| 45 | 53.8 | 57 | Volume of cube |
| 45 | 53.8 | 57 | Acute and obtuse angles |
| 45 | 53.8 | 56 | Area of triangle |
| 47 | 53 | 62 | Rounding off decimals |
| 48 | 52.8 | 57 | Measuring angles |
| 49 | 52.7 | 58 | Decimal equivalents |
| 50 | 52.5 | 73 | Liquid measure |
| 51 | 51.8 | 59 | Division of decimals |
| 52 | 51.4 | 54 | Squaring a number |
| 53 | 51.4 | 56 | Area of rectangle |
| 53 | 51.4 | 56 | Area of square |
| 55 | 49.2 | 61 | Averages |
| 56 | 46.4 | 65 | Division, whole numbers |
| 57 | 45.6 | 52 | Multiplication of decimals |
| 58 | 41.9 | 49 | Dividing whole numbers and decimals by 10,100,etc. |
| 59 | 40.9 | 47 | Multiplying whole numbers and decimals by 10,100,etc. |
| 60 | 37.4 | 46 | Rounding numbers |
| 61 | 36.8 | 42 | Subtraction of decimals |
| 62.5 | 36.2 | 42 | Addition of decimals |
| 62.5 | 36.2 | 50 | Multiplication, whole numbers |
| 64 | 34.7 | 42 | Reading large numbers |
| 65 | 27.2 | 37 | Subtraction, whole numbers |
| 66 | 25.2 | 35 | Addition, whole numbers |

TABLE 99

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF HOUSING HOME FURNISHINGS TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1.5 | 100 | 10 | Area of rectangle |
| 1.5 | 100 | 10 | Area of square |
| 4 | 90 | 9 | Addition, fractions |
| 4 | 90 | 9 | Subtraction, fractions |
| 4 | 90 | 9 | Reading a rule |
| 7.5 | 80 | 8 | Meaning of percentage |
| 7.5 | 80 | 8 | Reducing fractions to lowest terms |
| 7.5 | 80 | 8 | Addition, whole numbers |
| 7.5 | 80 | 8 | Multiplication, fractions |
| 10 | 77.8 | 7 | Area of circle |
| 12 | 70 | 7 | Multiplication, whole numbers |
| 12 | 70 | 7 | Division, whole numbers |
| 12 | 70 | 7 | Subtraction, whole numbers |
| 16 | 66.7 | 6 | Area of triangle |
| 16 | 66.7 | 6 | Addition, mixed numbers |
| 16 | 66.7 | 6 | Reducing mixed numbers to simplest form |
| 16 | 66.7 | 6 | Division, mixed numbers |
| 16 | 66.7 | 6 | Subtraction, mixed numbers |
| 20 | 60 | 6 | Reading large numbers |
| 20 | 60 | 6 | Ratio and proportion |
| 20 | 60 | 6 | Averages |
| 25 | 55.6 | 5 | Comparing fractions |
| 25 | 55.6 | 5 | Measuring angles |
| 25 | 55.6 | 5 | Multiplication, mixed numbers |
| 25 | 55.6 | 5 | Finding a number when a per cent of it is known |
| 25 | 55.6 | 5 | Improper fractions, mixed numbers |
| 25 | 55.6 | 5 | Finding per cent of a number |
| 25 | 55.6 | 5 | Finding what per cent one number is of another |
| 29.5 | 50 | 5 | Rounding numbers |
| 29.5 | 50 | 5 | Squaring a number |
| 32.5 | 44.4 | 4 | Multiplication of decimals |
| 32.5 | 44.4 | 4 | Division of decimals |
| 32.5 | 44.4 | 4 | Subtraction of decimals |
| 32.5 | 44.4 | 4 | Addition of decimals |
| 36 | 40 | 4 | Changing decimals to per cents |
| 36 | 40 | 4 | Changing per cent to decimals |
| 36 | 40 | 4 | Area of parallelogram |
| 44 | 33.3 | 3 | Rounding off decimals |
| 44 | 33.3 | 3 | Square root |
| 44 | 33.3 | 3 | Changing common fractions to decimals |
| 44 | 33.3 | 3 | Changing decimals to common fractions |
| 44 | 33.3 | 3 | Area of trapezoid |
| 44 | 33.3 | 3 | Acute and obtuse angles |
| 44 | 33.3 | 3 | Changing per cents to common fractions |
| 44 | 33.3 | 3 | Decimal equivalents |
| 44 | 33.3 | 3 | Finding length of unknown side of right triangle |
| 44 | 33.3 | 3 | Finding what part one number is of another |
| 44 | 33.3 | 3 | Simple algebraic equation with one unknown |
| 44 | 33.3 | 3 | Reading, writing decimals |
| 44 | 33.3 | 3 | Liquid measure |
| 52 | 30 | 3 | Circumference using $C = \pi d = 2\pi r$ |
| 52 | 30 | 3 | Area of circle using $A = \pi r^2$ |
| 52 | 30 | 3 | Using pi $\pi$ |
| 58.5 | 22.2 | 2 | Multiplying whole numbers and decimals by 10, 100, etc. |
| 58.5 | 22.2 | 2 | Dividing whole numbers and decimals by 10, 100, etc. |
| 58.5 | 22.2 | 2 | Finding a number when a fractional part of it is known |
| 58.5 | 22.2 | 2 | Changing common fractions to per cents |
| 58.5 | 22.2 | 2 | Volume of sphere |
| 58.5 | 22.2 | 2 | Volume of cylinder |
| 58.5 | 22.2 | 2 | Volume of cube |
| 58.5 | 22.2 | 2 | Volume of cone |
| 58.5 | 22.2 | 2 | Volume of pyramid |
| 58.5 | 22.2 | 2 | Volume of rectangular solid |
| 69 | 11.1 | 1 | Temperature conversion |
| 65 | 9 | 9 | Division, fractions |
| 66 | 0 | 0 | Micrometer reading |

TABLE 100

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING HOUSING HOME FURNISHINGS STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 2.5 | 85.7 | 6 | Circumference using C = πd = 2πr |
| 2.5 | 85.7 | 6 | Area of circle using A = πr 2 |
| 2.5 | 85.7 | 6 | Measuring angles 85.7 |
| 2.5 | 85.7 | 6 | Square root |
| 6.5 | 83.3 | 5 | Acute and obtuse angles |
| 6.5 | 83.3 | 5 | Finding length of unknown side of right triangle |
| 6.5 | 83.3 | 5 | Finding a number when a per cent of it is known |
| 6.5 | 83.3 | 5 | Micrometer reading |
| 10 | 75 | 6 | Squaring a number |
| 10 | 75 | 6 | Ratio and proportion |
| 10 | 75 | 6 | Reducing mixed numbers to simplest form |
| 12.5 | 71.4 | 5 | Area of triangle |
| 12.5 | 71.4 | 5 | Using pi π |
| 15 | 62.5 | 5 | Area of circle |
| 15 | 62.5 | 5 | Comparing fractions |
| 15 | 62.5 | 5 | Improper fractions, mixed numbers |
| 17.5 | 60 | 6 | Area of rectangle |
| 17.5 | 60 | 6 | Area of square |
| 20.5 | 57.1 | 4 | Area of parallelogram |
| 20.5 | 57.1 | 4 | Simple algebraic equation with one unknown |
| 20.5 | 57.1 | 4 | Finding what per cent one number is of another |
| 20.5 | 57.1 | 4 | Finding a number when a fractional part of it is known |
| 23 | 50.1 | 4 | Changing per cents to common fractions |
| 30 | 50 | 4 | Changing decimals to common fractions |
| 30 | 50 | 4 | Decimal equivalents |
| 30 | 50 | 3 | Reading, writing decimals |
| 30 | 50 | 3 | Volume of rectangular solid |
| 30 | 50 | 3 | Volume of cube |
| 30 | 50 | 3 | Volume of cylinder |
| 30 | 50 | 3 | Volume of sphere |
| 30 | 50 | 3 | Volume of cone |
| 30 | 50 | 3 | Volume of pyramid |
| 30 | 50 | 5 | Reading a rule |
| 30 | 50 | 3 | Temperature conversion |
| 30 | 50 | 3 | Finding what part one number is of another |
| 30 | 50 | 3 | Area of trapezoid |
| 37 | 44.4 | 4 | Multiplication, fractions |
| 39.5 | 42.9 | 3 | Finding per cent of a number |
| 39.5 | 42.9 | 3 | Liquid measure |
| 39.5 | 42.9 | 3 | Changing common fractions to decimals |
| 39.5 | 42.9 | 3 | Changing decimals to per cents |
| 43.5 | 40 | 4 | Division, fractions |
| 43.5 | 40 | 4 | Reducing fractions to lowest terms |
| 43.5 | 40 | 4 | Addition, fractions |
| 43.5 | 40 | 4 | Subtraction, fractions |
| 46 | 37.5 | 3 | Changing per cent to decimals |
| 48 | 33.3 | 2 | Changing common fractions to per cents |
| 48 | 33.3 | 3 | Division, mixed numbers |
| 48 | 33.3 | 2 | Rounding off decimals |
| 50 | 30 | 3 | Meaning of percentage |
| 52 | 25 | 2 | Division of decimals |
| 52 | 25 | 2 | Multiplying whole numbers and decimals by 10,100,etc. |
| 52 | 25 | 2 | Multiplication, mixed numbers |
| 54.5 | 22.2 | 2 | Addition, mixed numbers |
| 54.5 | 22.2 | 2 | Subtraction, mixed numbers |
| 56 | 14.3 | 1 | Rounding numbers |
| 58.5 | 12.5 | 1 | Subtraction of decimals |
| 58.5 | 12.5 | 1 | Multiplication of decimals |
| 58.5 | 12.5 | 1 | Dividing whole numbers and decimals by 10,100,etc. |
| 58.5 | 12.5 | 1 | Averages |
| 61 | 11.1 | 1 | Division, whole numbers |
| 64 | 0 | 0 | Addition, whole numbers |
| 64 | 0 | 0 | Subtraction, whole numbers |
| 64 | 0 | 0 | Multiplication, whole numbers |
| 64 | 0 | 0 | Reading large numbers |
| 64 | 0 | 0 | Addition of decimals |

TABLE 101

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF USEFUL HOME ECONOMICS OTHER TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 97 | 32 | Liquid measure |
| 2.5 | 93.9 | 31 | Subtraction, whole numbers |
| 2.5 | 93.9 | 31 | Addition, whole numbers |
| 4.5 | 90.9 | 30 | Addition, fractions |
| 4.5 | 90.9 | 30 | Meaning of percentage |
| 6 | 87.9 | 29 | Division, whole numbers |
| 7.5 | 84.8 | 28 | Subtraction, fractions |
| 7.5 | 84.8 | 28 | Multiplication, whole numbers |
| 9 | 75.8 | 25 | Reducing fractions to lowest terms |
| 10 | 75 | 24 | Reading a rule |
| 11 | 72.7 | 24 | Multiplication, fractions |
| 12 | 69.7 | 23 | Division, fractions |
| 14.5 | 66.7 | 22 | Finding per cent of a number |
| 14.5 | 66.7 | 22 | Subtraction, mixed numbers |
| 14.5 | 66.7 | 22 | Addition, mixed numbers |
| 14.5 | 66.7 | 22 | Rounding numbers |
| 18 | 63.6 | 21 | Averages |
| 18 | 63.6 | 21 | Comparing fractions |
| 18 | 63.6 | 21 | Temperature conversion |
| 21.5 | 60.6 | 20 | Multiplication, mixed numbers |
| 21.5 | 60.6 | 20 | Reducing mixed numbers to simplest form |
| 21.5 | 60.6 | 20 | Improper fractions, mixed numbers |
| 21.5 | 60.6 | 20 | Finding what per cent one number is of another |
| 24 | 62.5 | 20 | Ratio and proportion |
| 25.5 | 57.6 | 19 | Reading, writing decimals |
| 25.5 | 57.6 | 19 | Rounding off decimals |
| 29 | 54.5 | 18 | Subtraction of decimals |
| 29 | 54.5 | 18 | Division of decimals |
| 29 | 54.5 | 18 | Addition of decimals |
| 29 | 54.5 | 18 | Multiplication of decimals |
| 29 | 54.5 | 18 | Division, mixed numbers |
| 32 | 51.6 | 16 | Reading large numbers |
| 33 | 51.5 | 17 | Changing common fractions to decimals |
| 34 | 48.5 | 16 | Decimal equivalents |
| 35 | 46.9 | 15 | Finding what part one number is of another |
| 36.5 | 45.5 | 15 | Changing per cent to decimals |
| 36.5 | 45.5 | 15 | Changing decimals to per cents |
| 40 | 42.4 | 14 | Changing decimals to common fractions |
| 40 | 42.4 | 14 | Dividing whole numbers and decimals by 10,100,etc. |
| 40 | 42.4 | 14 | Changing per cents to common fractions |
| 40 | 42.4 | 14 | Multiplying whole numbers and decimals by 10,100,etc. |
| 40 | 42.4 | 14 | Changing common fractions to per cents |
| 43 | 39.4 | 13 | Area of square |
| 44 | 34.4 | 11 | Finding a number when a fractional part of it is known |
| 45 | 33.3 | 11 | Finding a number when a per cent of it is known |
| 46 | 30.3 | 10 | Area of rectangle |
| 47 | 24.2 | 8 | Area of circle |
| 48 | 21.2 | 7 | Simple algebraic equation with one unknown |
| 49 | 15.2 | 5 | Measuring angles |
| 50.5 | 12.1 | 4 | Area of triangle |
| 50.5 | 12.1 | 4 | Squaring a number |
| 53.5 | 9.1 | 3 | Circumference using $C = \pi d = 2\pi r$ |
| 53.5 | 9.1 | 3 | Micrometer reading |
| 53.5 | 9.1 | 3 | Area of parallelogram |
| 53.5 | 9.1 | 3 | Finding length of unknown side of right triangle |
| 58.5 | 6.1 | 2 | Volume of rectangular solid |
| 58.5 | 6.1 | 2 | Square root |
| 58.5 | 6.1 | 2 | Volume of cube |
| 58.5 | 6.1 | 2 | Area of circle using $A = \pi r^2$ |
| 58.5 | 6.1 | 2 | Using pi $\pi$ |
| 58.5 | 6.1 | 2 | Area of trapezoid |
| 64 | 3 | 1 | Acute and obtuse angles |
| 64 | 3 | 1 | Volume of pyramid |
| 64 | 3 | 1 | Volume of cylinder |
| 64 | 3 | 1 | Volume of sphere |
| 64 | 3 | 1 | Volume of cone |

TABLE 102

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING USEFUL HOME ECONOMICS OTHER STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 89.7 | 26 | Temperature conversion |
| 2 | 78.8 | 26 | Addition, fractions |
| 3 | 78.1 | 25 | Subtraction, fractions |
| 4 | 75.9 | 22 | Reducing fractions to lowest terms |
| 5 | 71.4 | 20 | Multiplication, mixed numbers |
| 6 | 71 | 22 | Multiplication, fractions |
| 7 | 69.2 | 18 | Division, mixed numbers |
| 8 | 69 | 20 | Division, fractions |
| 9.5 | 66.7 | 20 | Finding per cent of a number |
| 9.5 | 66.7 | 18 | Ratio and proportion |
| 11 | 64.3 | 18 | Comparing fractions |
| 12 | 62.1 | 18 | Improper fractions, mixed numbers |
| 14.5 | 60 | 15 | Area of circle |
| 14.5 | 60 | 18 | Reducing mixed numbers to simplest form |
| 14.5 | 60 | 18 | Addition, mixed numbers |
| 14.5 | 60 | 18 | Subtraction, mixed numbers |
| 18 | 59.3 | 16 | Finding a number when a per cent of it is known |
| 18 | 59.3 | 16 | Changing per cent to decimals |
| 18 | 59.3 | 16 | Changing decimals to per cents |
| 20.5 | 58.3 | 14 | Finding length of unknown side of right triangle |
| 20.5 | 58.3 | 14 | Measuring angles |
| 22.5 | 57.1 | 16 | Finding what part one number is of another |
| 22.5 | 57.1 | 16 | Finding what per cent one number is of another |
| 25 | 54.2 | 13 | Circumference using $C = \pi d = 2\pi r$ |
| 25 | 54.2 | 13 | Area of circle using $A = \pi r^2$ |
| 25 | 54.2 | 13 | Area of triangle |
| 27.5 | 53.8 | 14 | Changing per cents to common fractions |
| 27.5 | 53.8 | 14 | Changing common fractions |
| 29 | 53.6 | 15 | Finding a number when a fractional part of it is known |
| 33.5 | 50 | 13 | Reading, writing decimals |
| 33.5 | 50 | 12 | Using pi $\pi$ |
| 33.5 | 50 | 12 | Area of parallelogram |
| 33.5 | 50 | 12 | Area of trapezoid |
| 33.5 | 50 | 12 | Volume of cylinder |
| 33.5 | 50 | 12 | Volume of sphere |
| 33.5 | 50 | 12 | Volume of cone |
| 33.5 | 50 | 12 | Volume of pyramid |
| 38 | 48 | 12 | Area of square |
| 39 | 47.8 | 11 | Acute and obtuse angles |
| 40 | 47.6 | 10 | Micrometer reading |
| 41.5 | 46.2 | 12 | Simple algebraic equation with one unknown |
| 41.5 | 46.2 | 12 | Changing common fractions to decimals |
| 43.5 | 45.8 | 11 | Volume of rectangular solid |
| 43.5 | 45.8 | 11 | Volume of cube |
| 45 | 45.5 | 10 | Square root |
| 46 | 43.8 | 14 | Meaning of percentage |
| 47 | 42.9 | 12 | Reading a rule |
| 48 | 41.7 | 10 | Area of rectangle |
| 49 | 39.1 | 9 | Squaring a number |
| 50.5 | 38.5 | 10 | Changing decimals to common fractions |
| 50.5 | 38.5 | 10 | Decimal equivlanets |
| 52 | 37 | 10 | Rounding off decimals |
| 53 | 31.3 | 10 | Liquid measure |
| 54.5 | 30.8 | 8 | Multiplication of decimals |
| 54.5 | 30.8 | 8 | Division of decimals |
| 56 | 28.6 | 8 | Averages |
| 57.5 | 26.9 | 7 | Addition of decimals |
| 57.5 | 26.9 | 7 | Subtraction of decimals |
| 59 | 26.7 | 8 | Division, whole numbers |
| 60.5 | 25 | 7 | Multiplying whole numbers and decimals by 10,100,etc. |
| 60.5 | 25 | 7 | Dividing whole numbers and decimals by 10,100,etc. |
| 62 | 24.1 | 7 | Rounding numbers |
| 63 | 23.3 | 7 | Multiplication, whole numbers |
| 64 | 22.2 | 6 | Reading large numbers |
| 65.5 | 13.3 | 4 | Addition, whole numbers |
| 65.5 | 13.3 | 4 | Subtraction, whole numbers |

TABLE 103

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS OF USEFUL HOME ECONOMICS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | SKILL |
|---|---|---|
| 1 | 95.5 | Addition, whole numbers |
| 2 | 93.3 | Subtraction, whole numbers |
| 3 | 89.8 | Division, whole numbers |
| 4 | 88.7 | Addition, fractions |
| 5 | 88.3 | Multiplication, whole numbers |
| 6 | 84 | Liquid measure |
| 7 | 82.6 | Subtraction, fractions |
| 8 | 73.8 | Addition, mixed numbers |
| 9 | 73.7 | Meaning of percentage |
| 10 | 73.6 | Multiplication, fractions |
| 11 | 72.9 | Division, fractions |
| 12 | 71.8 | Reducing fractions to lowest terms |
| 13 | 71 | Subtraction, mixed numbers |
| 14 | 64.3 | Reading a rule |
| 15 | 62.5 | Averages |
| 16 | 61.1 | Multiplication, mixed numbers |
| 17 | 60.3 | Division, mixed numbers |
| 18 | 60.2 | Reducing mixed numbers to simplest form |
| 19 | 58.4 | Improper fractions, mixed numbers |
| 20 | 57.5 | Finding per cent of a number |
| 21 | 56.8 | Rounding numbers |
| 22 | 55.7 | Comparing fractions |
| 23 | 50.8 | Reading, writing decimals |
| 24 | 47 | Ratio and proportion |
| 25 | 45.6 | Addition of decimals |
| 26 | 44.7 | Rounding off decimals |
| 27 | 44 | Subtraction of decimals |
| 28 | 43.7 | Reading large numbers |
| 29 | 43.6 | Finding what per cent one number is of another |
| 31 | 42.9 | Multiplying whole numbers and decimals by 10, 100, etc. |
| 31 | 42.9 | Dividing whole numbers and decimals by 10, 100, etc. |
| 31 | 42.9 | Changing per cent to decimals |
| 33 | 41.8 | Changing decimals to per cents |
| 34 | 41.6 | Multiplication of decimals |
| 35 | 41.2 | Division of decimals |
| 36.5 | 40.8 | Changing common fractions to per cents |
| 36.5 | 40.8 | Changing common fractions to decimals |
| 38 | 40.7 | Changing per cents to common fractions |
| 39 | 37.2 | Finding what part one number is of another |
| 40 | 36.4 | Temperature conversion |
| 41 | 35.7 | Area of square |
| 42 | 34.7 | Area of rectangle |
| 43 | 34.1 | Changing decimals to common fractions |
| 44 | 33.1 | Finding a number when a per cent of it is known |
| 45 | 32 | Decimal equivalents |
| 46 | 30.8 | Finding a number when a fractional part of it is known |
| 47 | 17.5 | Simple algebraic equation with one unknown |
| 48 | 17.4 | Area of circle |
| 49 | 16.7 | Measuring angles |
| 50 | 10.5 | Squaring a number |
| 51 | 10.1 | Area of triangle |
| 52 | 8.3 | Volume of rectangular solid |
| 53 | 7.5 | Volume of cylinder |
| 54 | 7.3 | Area of parallelogram |
| 55 | 7.1 | Area of circle using $A = \pi r^2$ |
| 56 | 6.9 | Volume of cube |
| 57 | 6.7 | Circumference using $C = \pi d = 2\pi r$ |
| 58 | 6.5 | Acute and obtuse angles |
| 59 | 5.5 | Square root |
| 60.5 | 4.7 | Area of trapezoid |
| 60.5 | 4.7 | Using pi $\pi$ |
| 62.5 | 3.4 | Finding length of unknown side of right triangle |
| 62.5 | 3.4 | Volume of sphere |
| 64 | 3.3 | Volume of cone |
| 65 | 2.4 | Micrometer reading |
| 66 | 1.6 | Volume of pyramid |

TABLE 104

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS OF USEFUL HOME ECONOMICS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING STUDENT

| RANK | PERCENT | SKILL |
|---|---|---|
| 1 | 68.3 | Ratio and proportion |
| 2 | 67.9 | Temperature conversion |
| 3 | 67.2 | Division, fractions |
| 4 | 66.2 | Multiplication, fractions |
| 5 | 65.4 | Addition, fractions |
| 6 | 64.6 | Subtraction, fractions |
| 7 | 63.4 | Comparing fractions |
| 8 | 63.1 | Reducing mixed numbers to simplest form |
| 9 | 62.9 | Improper fractions, mixed numbers |
| 10 | 62.3 | Finding a number when a fractional part of it is known |
| 11 | 61.3 | Division, mixed numbers |
| 12.5 | 61 | Finding a number when a per cent of it is known |
| 12.5 | 61 | Volume of cylinder |
| 14 | 60.5 | Volume of sphere |
| 15.5 | 60.2 | Finding what part one number is of another |
| 15.5 | 60.2 | Multiplication, mixed numbers |
| 17.5 | 60 | Finding per cent of a number |
| 17.5 | 60 | Volume of cone |
| 19.5 | 59.9 | Volume of pyramid |
| 19.5 | 59.9 | Micrometer reading |
| 21.5 | 59.6 | Area of circle using $A=\pi r2$ |
| 21.5 | 59.6 | Volume of rectangular solid |
| 23 | 59.5 | Reducing fractions to lowest terms |
| 24 | 59.2 | Volume of cube |
| 25 | 59.1 | Simple algebraic equation with one unknown |
| 26.5 | 58.9 | Circumference using $C=\pi d=2\pi r$ |
| 26.5 | 58.9 | Square root |
| 28 | 58.6 | Subtraction, mixed numbers |
| 29 | 58.5 | Finding what per cent one number is of another |
| 30 | 58.4 | Finding length of unknown side of right triangle |
| 31 | 58 | Area of circle |
| 32 | 57.9 | Using pi $\pi$ |
| 33 | 57.5 | Area of trapezoid |
| 34.5 | 57.3 | Changing common fractions to per cents |
| 34.5 | 57.3 | Addition, mixed numbers |
| 36 | 57.2 | Measuring angles |
| 37 | 57.1 | Changing per cents to common fractions |
| 38 | 56.7 | Acute and obtuse angles |
| 39 | 56.4 | Area of triangle |
| 40 | 56.1 | Area of parallelogram |
| 41 | 55.6 | Changing common fractions to decimals |
| 42 | 55.3 | Changing per cent to decimals |
| 43 | 54.9 | Reading a rule |
| 44 | 54.6 | Changing decimals to per cents |
| 45 | 53.3 | Changing decimals to common fractions |
| 46 | 52.5 | Squaring a number |
| 47 | 51.5 | Decimal equivalents |
| 48 | 50.9 | Area of rectangle |
| 49 | 50.5 | Area of square |
| 50 | 49.1 | Meaning of percentage |
| 51 | 46.6 | Rounding off decimals |
| 52 | 46.5 | Reading, writing decimals |
| 53 | 43.3 | Division of decimals |
| 54 | 42.6 | Liquid measure |
| 55 | 41 | Averages |
| 56 | 40.7 | Multiplication of decimals |
| 57 | 36.1 | Dividing whole numbers and decimals by 10, 100, etc. |
| 58 | 34.4 | Addition of decimals |
| 59.5 | 34.2 | Multiplying whole numbers and decimals by 10, 100, etc. |
| 59.5 | 34.2 | Subtraction of decimals |
| 61 | 32.7 | Division, whole numbers |
| 62 | 30 | Rounding numbers |
| 63 | 26.1 | Multiplication, whole numbers |
| 64 | 25.4 | Reading large numbers |
| 65 | 18.3 | Subtraction, whole numbers |
| 66 | 16 | Addition, whole numbers |

TABLE 105

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF BOOKKEEPING-ACCOUNTING TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1.5 | 100 | 425 | Subtraction, whole numbers |
| 1.5 | 100 | 425 | Addition, whole numbers |
| 3 | 99.4 | 402 | Reading large numbers |
| 4 | 97.4 | 415 | Multiplication, whole numbers |
| 5 | 95.1 | 404 | Reading, writing decimals |
| 6 | 94.8 | 404 | Division, whole numbers |
| 7 | 94.3 | 396 | Meaning of percentage |
| 8 | 93.2 | 395 | Rounding off decimals |
| 9 | 91.9 | 385 | Changing per cent to decimals |
| 10 | 91.4 | 381 | Multiplying whole numbers and decimals by 10,100,etc. |
| 11 | 91 | 382 | Finding per cent of a number |
| 12 | 90.9 | 381 | Multiplication of decimals |
| 13 | 90.8 | 384 | Rounding numbers |
| 14 | 90.2 | 378 | Addition of decimals |
| 15 | 89.7 | 373 | Changing decimals to per cents |
| 16 | 89.2 | 372 | Subtraction of decimals |
| 17 | 88.6 | 367 | Dividing whole numbers and decimals by 10, 100, etc. |
| 18 | 84.2 | 356 | Changing common fractions to decimals |
| 19 | 83.5 | 348 | Division of decimals |
| 20 | 80 | 339 | Averages |
| 21 | 79.5 | 333 | Finding what per cent one number is of another |
| 22 | 79.3 | 329 | Decimal equivalents |
| 23 | 78.3 | 325 | Changing common fractions to per cents |
| 24 | 75.3 | 314 | Finding what part one number is of another |
| 25 | 74.5 | 310 | Changing per cents to common fractions |
| 26 | 72.5 | 303 | Finding a number when a per cent of it is known |
| 27 | 71.9 | 299 | Changing decimals to common fractions |
| 28 | 69.7 | 294 | Reducing fractions to lowest terms |
| 29 | 67.8 | 286 | Multiplication, fractions |
| 30 | 66.8 | 278 | Finding a number when a fractional part of it is known |
| 31 | 66 | 278 | Addition, fractions |
| 32 | 64.2 | 271 | Multiplication, mixed numbers |
| 33 | 64.1 | 270 | Subtraction, fractions |
| 34 | 62.4 | 262 | Addition, mixed numbers |
| 35 | 61.6 | 260 | Division, fractions |
| 36 | 61.3 | 258 | Improper fractions, mixed numbers |
| 37 | 61 | 257 | Subtraction, mixed numbers |
| 38 | 59.4 | 250 | Reducing mixed numbers to simplest form |
| 39 | 58.8 | 247 | Comparing fractions |
| 40 | 58.3 | 245 | Division, mixed numbers |
| 41 | 43 | 180 | Ratio and proportion |
| 42 | 22.1 | 90 | Simple algebraic equation with one unknown |
| 43 | 18.2 | 75 | Reading a rule |
| 44 | 9.2 | 38 | Squaring a number |
| 45 | 8.4 | 35 | Liquid measure |
| 46 | 5.8 | 24 | Area of square |
| 47 | 5.3 | 22 | Area of rectangle |
| 48 | 4.1 | 17 | Square root |
| 49 | 2.7 | 11 | Area of circle |
| 50.5 | 2.2 | 9 | Measuring angles |
| 50.5 | 2.2 | 9 | Area of triangle |
| 52 | 1.9 | 8 | Volume of rectangular solid |
| 54.5 | 1.7 | 7 | Circumference using $C = \pi d = 2\pi r$ |
| 54.5 | 1.7 | 7 | Area of circle using $A = \pi r^2$ |
| 54.5 | 1.7 | 7 | Using pi $\pi$ |
| 54.5 | 1.7 | 7 | Temperature conversion |
| 58.5 | 1 | 4 | Volume of cylinder |
| 58.5 | 1 | 4 | Acute and obtuse angles |
| 58.5 | 1 | 4 | Volume of cube |
| 58.5 | 1 | 4 | Area of parallelogram |
| 61.5 | .7 | 3 | Finding length of unknown side of right triangle |
| 61.5 | .7 | 3 | Area of trapezoid |
| 63 | .5 | 2 | Volume of sphere |
| 65 | .2 | 1 | Micrometer reading |
| 65 | .2 | 1 | Volume of cone |
| 65 | .2 | 1 | Volume of pyramid |

TABLE 106

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING BOOKKEEPING-ACCOUNTING STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 77.2 | 309 | Finding what per cent one number is of another |
| 2 | 77.1 | 269 | Ratio and proportion |
| 3 | 75.5 | 292 | Finding a number when a per cent of it is known |
| 4 | 74.2 | 293 | Finding what part one number is of another |
| 5 | 74.1 | 283 | Finding a number when a fractional part of it is known |
| 6 | 72.4 | 296 | Changing common fractions to decimals |
| 7 | 71.5 | 284 | Decimal equivalents |
| 8 | 71.1 | 216 | Finding length of unknown side of right triangle |
| 9 | 71 | 215 | Volume of sphere |
| 10 | 70.7 | 215 | Volume of pyramid |
| 11 | 70.5 | 215 | Acute and obtuse angles |
| 12 | 70.4 | 214 | Volume of cone |
| 13 | 70.1 | 213 | Area of trapezoid |
| 14 | 70 | 212 | Temperature conversion |
| 15 | 69.7 | 212 | Volume of cylinder |
| 16 | 69.6 | 229 | Simple algebraic equation with one unknown |
| 17 | 69.5 | 212 | Volume of cube |
| 18 | 69.4 | 211 | Micrometer reading |
| 19 | 69.3 | 276 | Changing common fractions to per cents |
| 20 | 69.2 | 272 | Changing per cents to common fractions |
| 21.5 | 68.5 | 209 | Volume of rectangular solid |
| 21.5 | 68.5 | 209 | Measuring angles |
| 23.5 | 68.4 | 208 | Area of parallelogram |
| 23.5 | 68.4 | 208 | Circumference using $A = \pi d = 2\pi r$ |
| 25 | 68.2 | 208 | Using pi $\pi$ |
| 26 | 68.1 | 213 | Square root |
| 27 | 67.8 | 206 | Area of circle using $A = \pi r^2$ |
| 28 | 67.7 | 266 | Changing decimals to common fractions |
| 29 | 67.5 | 206 | Area of circle |
| 30 | 66.1 | 201 | Area of triangle |
| 31 | 63.9 | 262 | Finding per cent of a number |
| 32 | 63.5 | 195 | Area of rectangle |
| 33 | 63.2 | 194 | Area of square |
| 34 | 62.9 | 259 | Changing per cent to decimals |
| 35 | 62.5 | 253 | Changing decimals to per cents |
| 36 | 61.7 | 234 | Division, mixed numbers |
| 37 | 61.1 | 234 | Division, fractions |
| 38 | 60.1 | 249 | Meaning of percentage |
| 39 | 59.6 | 239 | Division of decimals |
| 40 | 59.2 | 184 | Liquid measure |
| 41 | 58.1 | 219 | Comparing fractions |
| 42 | 52.5 | 181 | Squaring a number |
| 43 | 56.9 | 239 | Reading, writing decimals |
| 44.5 | 56.6 | 220 | Multiplication, fractions |
| 44.5 | 56.6 | 218 | Multiplication, mixed numbers |
| 46 | 55.3 | 178 | Reading a rule |
| 47 | 54.7 | 229 | Rounding off decimals |
| 48 | 54.5 | 205 | Improper fractions, mixed numbers |
| 49 | 52.9 | 200 | Reducing mixed numbers to simplest form |
| 50 | 51.6 | 197 | Subtraction, fractions |
| 51 | 49.7 | 190 | Subtraction, mixed numbers |
| 52 | 49.5 | 191 | Addition, fractions |
| 53 | 49.4 | 196 | Reducing fractions to lowest terms |
| 54 | 48.2 | 183 | Addition, mixed numbers |
| 55 | 47.4 | 191 | Dividing whole numbers and decimals by 10,100,etc. |
| 56 | 45.3 | 185 | Multiplication of decimals |
| 57 | 43.4 | 175 | Averages |
| 58 | 41.4 | 168 | Multiplying whole numbers and decimals by 10,100, etc. |
| 59 | 39.6 | 166 | Division, whole numbers |
| 60 | 39.1 | 164 | Rounding numbers |
| 61 | 38.2 | 162 | Reading large numbers |
| 62 | 29.6 | 120 | Subtraction of decimals |
| 63 | 29 | 120 | Addition of decimals |
| 64 | 27.2 | 114 | Multiplication, whole numbers |
| 65 | 25.5 | 108 | Addition, whole numbers |
| 66 | 21 | 89 | Subtraction, whole numbers |

TABLE 107

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF BUSINESS DATA PROCESSING TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1.5 | 96.9 | 62 | Subtraction, whole numbers |
| 1.5 | 96.9 | 62 | Addition, whole numbers |
| 3 | 93.8 | 60 | Multiplication, whole numbers |
| 4 | 90.6 | 58 | Division, whole numbers |
| 5.5 | 89.1 | 57 | Reading large numbers |
| 5.5 | 89.1 | 57 | Rounding off decimals |
| 7.5 | 85.9 | 55 | Rounding numbers |
| 7.5 | 85.9 | 55 | Reading, writing decimals |
| 10 | 81.3 | 52 | Multiplying whole numbers and decimals by 10, 100, etc. |
| 10 | 81.3 | 52 | Meaning of percentage |
| 10 | 81.3 | 52 | Addition of decimals |
| 12.5 | 79.7 | 51 | Changing decimals to per cents |
| 12.5 | 79.7 | 51 | Dividing whole numbers and decimals by 10, 100, etc. |
| 14.5 | 78.1 | 50 | Subtraction of decimals |
| 14.5 | 78.1 | 50 | Changing per cent to decimals |
| 16 | 76.6 | 49 | Multiplication of decimals |
| 16 | 76.6 | 49 | Division of decimals |
| 16 | 76.6 | 49 | Averages |
| 18 | 75 | 48 | Finding per cent of a number |
| 19 | 70.3 | 45 | Finding what per cent one number is of another |
| 20 | 69.8 | 44 | Changing common fractions to decimals |
| 21 | 68.8 | 44 | Decimal equivalents |
| 22 | 62.5 | 40 | Finding a number when a per cent of it is known |
| 23 | 60.9 | 39 | Finding what part one number is of another |
| 24.5 | 60.3 | 38 | Subtraction, mixed numbers |
| 24.5 | 60.3 | 38 | Addition, mixed numbers |
| 27 | 58.7 | 37 | Changing common fractions to per cents |
| 27 | 58.7 | 37 | Addition, fractions |
| 27 | 58.7 | 37 | Multiplication, fractions |
| 30 | 57.1 | 36 | Multiplication, mixed numbers |
| 30 | 57.1 | 36 | Subtraction, fractions |
| 30 | 57.9 | 36 | Division, mixed numbers |
| 32 | 56.5 | 35 | Reducing mixed numbers to simplest form |
| 33 | 55.6 | 35 | Changing decimals to common fractions |
| 35 | 54 | 34 | Changing per cents to common fractions |
| 35 | 54 | 34 | Division, fractions |
| 35 | 54 | 34 | Reducing fractions to lowest terms |
| 36 | 50.8 | 32 | Finding a number when a fractional part of it is known |
| 37 | 49.2 | 31 | Improper fractions, mixed numbers |
| 38 | 47.6 | 30 | Comparing fractions |
| 39 | 41.3 | 26 | Squaring a number |
| 40 | 39.7 | 25 | Simple algebraic equation with one unknown |
| 41 | 34.4 | 22 | Ratio and proportion |
| 42 | 33.3 | 21 | Reading a rule |
| 43 | 28.6 | 18 | Square root |
| 44 | 11.3 | 7 | Using pi $\pi$ |
| 46.5 | 9.7 | 6 | Area of square |
| 46.5 | 9.7 | 6 | Area of circle using $A = \pi r^2$ |
| 46.5 | 9.7 | 6 | Circumference using $C = \pi d = 2\pi r$ |
| 46.5 | 9.7 | 6 | Area of rectangle |
| 49 | 9.5 | 6 | Measuring angles |
| 50 | 8.2 | 5 | Volume of cube |
| 51.5 | 8.1 | 5 | Area of circle |
| 51.5 | 8.1 | 5 | Area of triangle |
| 56.5 | 6.5 | 4 | Volume of sphere |
| 56.5 | 6.5 | 4 | Volume of pyramid |
| 56.5 | 6.5 | 4 | Volume of cylinder |
| 56.5 | 6.5 | 4 | Volume of cone |
| 56.5 | 6.5 | 4 | Finding length of unknown side of right triangle |
| 56.5 | 6.5 | 4 | Area of parallelogram |
| 56.5 | 6.5 | 4 | Area of trapezoid |
| 56.5 | 6.5 | 4 | Volume of rectangular solid |
| 61.5 | 4.8 | 3 | Liquid measure |
| 61.5 | 4.8 | 3 | Temperature conversion |
| 63 | 3.2 | 2 | Acute and obtuse angles |
| 64 | 1.6 | 1 | Micrometer reading |

TABLE 108
RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING BUSINESS DATA PROCESSING STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 69.4 | 43 | Finding what per cent one number is of another |
| 2 | 68.9 | 42 | Finding what part one number is of another |
| 3.5 | 67.2 | 41 | Finding a number when a per cent of it is known |
| 3.5 | 67.2 | 39 | Changing common fractions to per cents |
| 5 | 66.7 | 40 | Decimal equivalents |
| 6 | 66.1 | 37 | Changing per cents to common fractions |
| 7 | 65.5 | 38 | Finding a number when a fractional part of it is known |
| 8 | 65 | 39 | Changing common fractions to decimals |
| 9 | 61.3 | 38 | Finding per cent of a number |
| 10 | 57.1 | 32 | Changing decimals to common fractions |
| 11 | 56.9 | 33 | Division, mixed numbers |
| 12 | 56.5 | 35 | Changing decimals to per cents |
| 13 | 55.8 | 29 | Ratio and proportion |
| 14 | 55.7 | 34 | Changing per cent to decimals |
| 15 | 55.4 | 31 | Comparing fractions |
| 16 | 54.9 | 28 | Square root |
| 17 | 54.2 | 32 | Division of decimals |
| 18 | 53.4 | 31 | Multiplication, mixed numbers |
| 22.5 | 53.2 | 33 | Meaning of percentage |
| 22.5 | 53.2 | 25 | Area of trapezoid |
| 22.5 | 53.2 | 25 | Area of parallelogram |
| 22.5 | 53.2 | 25 | Volume of rectangular solid |
| 22.5 | 53.2 | 25 | Volume of cylinder |
| 22.5 | 53.2 | 25 | Volume of sphere |
| 22.5 | 53.2 | 25 | Volume of cone |
| 22.5 | 53.2 | 25 | Volume of pyramid |
| 28.5 | 52.1 | 25 | Volume of cube |
| 28.5 | 57.1 | 24 | Circumference using $C = \pi d = 2\pi r$ |
| 28.5 | 51.1 | 24 | Area of circle using $A = \pi r^2$ |
| 28.5 | 51.1 | 24 | Area of circle |
| 31 | 50.9 | 29 | Reducing mixed numbers to simplest form |
| 32 | 50.8 | 30 | Multiplication of decimals |
| 34.5 | 50 | 24 | Micrometer reading |
| 34.5 | 50 | 28 | Division, fractions |
| 34.5 | 50 | 23 | Temperature conversion |
| 34.5 | 50 | 28 | Improper fractions, mixed numbers |
| 37 | 49.1 | 28 | Multiplication, fractions |
| 38 | 49 | 28 | Simple algebraic equation with one unknown |
| 39.5 | 48.9 | 23 | Area of triangle |
| 39.5 | 48.9 | 23 | Finding length of unknown side of right triangle |
| 42 | 47.9 | 23 | Area of rectangle |
| 42 | 47.9 | 23 | Area of square |
| 42 | 47.9 | 23 | Measuring angles |
| 44 | 47.4 | 27 | Addition, fractions |
| 45 | 46.8 | 22 | Acute and obtuse angles |
| 46 | 46 | 29 | Reading, writing decimals |
| 47 | 45.9 | 28 | Averages |
| 48 | 45.8 | 27 | Subtraction, mixed numbers |
| 49 | 45.8 | 22 | Using pi $\pi$ |
| 50 | 44.7 | 21 | Liquid measure |
| 51 | 44.6 | 25 | Reducing fractions to lowest terms |
| 52 | 44.4 | 24 | Squaring a number |
| 53 | 43.9 | 25 | Subtraction, fractions |
| 54.5 | 42.6 | 23 | Reading a rule |
| 54.5 | 42.6 | 26 | Subtraction of decimals |
| 56 | 41.9 | 26 | Rounding off decimals |
| 57.5 | 41 | 25 | Dividing whole numbers and decimals by 10,100,etc. |
| 57.5 | 41 | 25 | Addition of decimals |
| 59 | 40.7 | 24 | Addition, mixed numbers |
| 60 | 39.3 | 24 | Multiplying whole numbers and decimals by 10,100, etc. |
| 61 | 34.4 | 21 | Division, whole numbers |
| 62 | 27.9 | 17 | Rounding numbers |
| 63 | 25.8 | 16 | Multiplication, whole numbers |
| 64 | 23.4 | 15 | Reading large numbers |
| 65 | 22.2 | 14 | Subtraction, whole numbers |
| 66 | 19 | 12 | Addition, whole numbers |

TABLE 109

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF BUSINESS EDUCATION OTHER TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1.5 | 99.4 | 154 | Addition, whole numbers |
| 1.5 | 99.4 | 154 | Subtraction, whole numbers |
| 3 | 96.2 | 150 | Multiplication, whole numbers |
| 4 | 95.5 | 148 | Division, whole numbers |
| 5 | 94.9 | 148 | Reading, writing decimals |
| 6 | 94.8 | 145 | Meaning of percentage |
| 7 | 92.9 | 143 | Addition of decimals |
| 8 | 91.6 | 141 | Subtraction of decimals |
| 9.5 | 91 | 141 | Rounding off decimals |
| 9.5 | 91 | 141 | Multiplication of decimals |
| 11 | 90.8 | 139 | Changing per cent to decimals |
| 13 | 90.3 | 139 | Averages |
| 13 | 90.3 | 140 | Rounding numbers |
| 13 | 90.3 | 140 | Division of decimals |
| 15 | 89.5 | 136 | Changing decimals to per cents |
| 16 | 88.4 | 137 | Finding per cent of a number |
| 17 | 88.2 | 135 | Multiplying whole numbers and decimals by 10,100,etc. |
| 18 | 87.7 | 135 | Reading large numbers |
| 19 | 87.6 | 134 | Dividing whole numbers and decimals by 10,100,etc. |
| 20 | 86.6 | 128 | Multiplication, mixed numbers |
| 21 | 85.8 | 133 | Changing common fractions to decimals |
| 22 | 83.9 | 130 | Finding what per cent one number is of another |
| 23 | 83.8 | 129 | Addition, fractions |
| 24 | 83.2 | 129 | Multiplication, fractions |
| 25 | 82.5 | 127 | Addition, mixed numbers |
| 26 | 82.6 | 128 | Division, fractions |
| 27.5 | 81.9 | 127 | Subtraction, fractions |
| 27.5 | 81.9 | 127 | Division, mixed numbers |
| 29 | 81.8 | 126 | Changing common fractions to per cents |
| 30.5 | 81.2 | 125 | Decimal equivalents |
| 30.5 | 81.2 | 125 | Subtraction, mixed numbers |
| 32.5 | 80.5 | 124 | Finding what part one number is of another |
| 32.5 | 80.5 | 124 | Reducing fractions to lowest terms |
| 34 | 79.9 | 123 | Changing decimals to common fractions |
| 35.5 | 79.2 | 122 | Finding a number when a per cent of it is known |
| 35.5 | 79.2 | 122 | Reducing mixed numbers to simplest form |
| 37 | 78.9 | 120 | Changing per cents to common fractions |
| 38 | 77.9 | 120 | Improper fractions, mixed numbers |
| 39.5 | 77.1 | 118 | Finding a number when a fractional part of it is known |
| 39.5 | 77.1 | 118 | Comparing fractions |
| 41 | 46.3 | 69 | Ratio and proportion |
| 42 | 39.5 | 58 | Reading a rule |
| 43 | 21.9 | 32 | Simple algebraic equation with one unknown |
| 44 | 20.9 | 31 | Squaring a number |
| 45 | 20.5 | 30 | Liquid measure |
| 46 | 13.7 | 20 | Area of rectangle |
| 47 | 12.3 | 18 | Area of square |
| 48 | 11.6 | 17 | Square root |
| 49 | 7.5 | 11 | Area of circle |
| 50.5 | 6.8 | 10 | Volume of rectangular solid |
| 50.5 | 6.8 | 10 | Temperature conversion |
| 52 | 6.2 | 9 | Volume of cube |
| 53.5 | 5.5 | 8 | Circumference using $C = \pi d = 2\pi r$ |
| 53.5 | 5.5 | 8 | Area of circle using $A = \pi r^2$ |
| 55.5 | 4.8 | 7 | Area of triangle |
| 55.5 | 4.8 | 7 | Using pi $\pi$ |
| 58.5 | 4.1 | 6 | Finding length of unknown side of right triangle |
| 58.5 | 4.1 | 6 | Measuring angles |
| 58.5 | 4.1 | 6 | Micrometer reading |
| 58.5 | 4.1 | 6 | Volume of cylinder |
| 61.5 | 3.4 | 5 | Area of parallelogram |
| 61.5 | 3.4 | 5 | Area of trapezoid |
| 63 | 2.7 | 4 | Acute and obtuse angles |
| 65 | 1.4 | 2 | Volume of pyramid |
| 65 | 1.4 | 2 | Volume of cone |
| 65 | 1.4 | 2 | Volume of sphere |

TABLE 110

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING BUSINESS EDUCATION OTHER STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 85.2 | 127 | Finding a number when a per cent of it is known |
| 2 | 85 | 125 | Finding a number when a fractional part of it is known |
| 3 | 83.9 | 125 | Finding what part one number is of another |
| 4 | 82.7 | 124 | Finding what per cent one number is of another |
| 5 | 81 | 119 | Decimal equivalents |
| 6 | 78.3 | 101 | Ratio and proportion |
| 7 | 78.1 | 114 | Changing decimals to common fractions |
| 8 | 77.7 | 115 | Changing common fractions to per cents |
| 9 | 77.5 | 117 | Changing common fractions to decimals |
| 10 | 75.5 | 111 | Changing per cents to common fractions |
| 11 | 75.4 | 89 | Volume of cylinder |
| 12 | 74.3 | 113 | Reading, writing decimals |
| 13 | 74.2 | 89 | Simple algebraic equation with one unknown |
| 14 | 73.9 | 88 | Area of circle |
| 15.5 | 73.8 | 110 | Division, fractions |
| 15.5 | 73.8 | 110 | Division, mixed numbers |
| 17.5 | 73.7 | 87 | Volume of sphere |
| 17.5 | 73.7 | 87 | Volume of cone |
| 19.5 | 73.1 | 87 | Volume of pyramid |
| 19.5 | 73.1 | 87 | Micrometer reading |
| 21.5 | 72.9 | 86 | Area of trapezoid |
| 21.5 | 72.9 | 86 | Volume of rectangular solid |
| 23 | 72.8 | 110 | Finding per cent of a number |
| 24 | 72.3 | 86 | Area of triangle |
| 25 | 72 | 85 | Finding length of unknown side of right triangle |
| 26 | 71.9 | 87 | Square root |
| 27 | 71.7 | 109 | Meaning of percentage |
| 28 | 71.4 | 85 | Volume of cube |
| 29.5 | 71.2 | 84 | Acute and obtuse angles |
| 29.5 | 71.2 | 84 | Using pi $\pi$ |
| 31 | 70.9 | 104 | Comparing fractions |
| 33,5 | 70.6 | 84 | Measuring angles |
| 33.5 | 70.6 | 84 | Area of parallelogram |
| 33.5 | 70.6 | 84 | Circumference using $C = \pi d = 2\pi r$ |
| 33.5 | 70.6 | 84 | Area of circle using $A = \pi r^2$ |
| 36 | 70.5 | 86 | Temperature conversion |
| 37 | 69.5 | 105 | Changing decimals to per cents |
| 38 | 69.1 | 105 | Changing per cent to decimals |
| 39.5 | 68.9 | 104 | Division of decimals |
| 39.5 | 68.9 | 102 | Multiplication, mixed numbers |
| 41 | 66.9 | 99 | Improper fractions, mixed numbers |
| 42 | 66.2 | 98 | Multiplication, fractions |
| 43 | 65.6 | 99 | Rounding off decimals |
| 44 | 64.7 | 77 | Area of square |
| 45 | 63.9 | 76 | Area of rectangle |
| 46 | 63.8 | 95 | Reducing mixed numbers to simplest form |
| 47.5 | 61.7 | 92 | Subtraction, fractions |
| 47.5 | 61.7 | 92 | Reducing fractions to lowest terms |
| 49 | 61.5 | 75 | Liquid measure |
| 50 | 61.1 | 91 | Subtraction, mixed numbers |
| 51 | 66.1 | 82 | Squaring a number |
| 52 | 58.4 | 87 | Addition, fractions |
| 53 | 58.1 | 72 | Reading a rule |
| 54 | 57.4 | 85 | Addition, mixed numbers |
| 55 | 56.7 | 85 | Multiplication of decimals |
| 56 | 56.3 | 85 | Averages |
| 57 | 54 | 81 | Dividing whole numbers and decimals by 10,100,etc. |
| 58 | 53 | 80 | Rounding numbers |
| 59 | 51.3 | 77 | Multiplying whole numbers and decimals by 10,100,etc. |
| 60 | 44.1 | 67 | Reading large numbers |
| 61 | 39.2 | 60 | Division, whole numbers |
| 62 | 38.4 | 58 | Subtraction of decimals |
| 63 | 38 | 57 | Addition of decimals |
| 64 | 29.4 | 45 | Multiplication, whole numbers |
| 65 | 24 | 37 | Addition, whole numbers |
| 66 | 20.1 | 31 | Subtraction, whole numbers |

TABLE 111

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF DATA PROCESSING TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 2 | 100 | 31 | Addition, whole numbers |
| 2 | 100 | 31 | Subtraction, whole numbers |
| 2 | 100 | 31 | Reading, writing decimals |
| 5 | 96.8 | 30 | Rounding off decimals |
| 5 | 96.8 | 30 | Multiplication, whole numbers |
| 5 | 96.8 | 30 | Division, whole numbers |
| 8.5 | 96.6 | 28 | Addition of decimals |
| 8.5 | 96.6 | 28 | Subtraction of decimals |
| 8.5 | 96.6 | 28 | Multiplication of decimals |
| 8.5 | 96.6 | 28 | Division of decimals |
| 11 | 96.4 | 27 | Finding per cent of a number |
| 12 | 93.5 | 29 | Averages |
| 15 | 93.1 | 27 | Multiplying whole numbers and decimals by 10, 100, etc. |
| 15 | 93.1 | 27 | Dividing whole numbers and decimals by 10, 100, etc. |
| 15 | 93.1 | 27 | Meaning of percentage |
| 15 | 93.1 | 27 | Changing per cent to decimals |
| 15 | 93.1 | 27 | Changing decimals to per cents |
| 18.5 | 90.3 | 28 | Reading large numbers |
| 18.5 | 90.3 | 28 | Rounding numbers |
| 20 | 89.7 | 26 | Decimal equivalents |
| 21 | 87.1 | 27 | Changing common fractions to decimals |
| 22.5 | 86.2 | 25 | Changing common fractions to per cents |
| 22.5 | 86.2 | 25 | Finding what per cent one number is of another |
| 24 | 83.9 | 26 | Addition, mixed numbers |
| 25.5 | 82.8 | 24 | Changing decimals to common fractions |
| 25.5 | 82.8 | 24 | Finding a number when a per cent of it is known |
| 28 | 80.6 | 25 | Subtraction, mixed numbers |
| 28 | 80.6 | 25 | Multiplication, mixed numbers |
| 28 | 80.6 | 25 | Division, mixed numbers |
| 31 | 79.3 | 23 | Changing per cents to common fractions |
| 31 | 79.3 | 23 | Squaring a number |
| 31 | 79.3 | 23 | Finding what part one number is of another |
| 33 | 78.6 | 22 | Finding a number when a fractional part of it is known |
| 35.5 | 77.4 | 24 | Addition, fractions |
| 35.5 | 77.4 | 24 | Subtraction, fractions |
| 35.5 | 77.4 | 24 | Multiplication, fractions |
| 35.5 | 77.4 | 24 | Division, fractions |
| 38.5 | 74.2 | 23 | Reducing fractions to lowest terms |
| 38.5 | 74.2 | 23 | Comparing fractions |
| 40 | 71 | 22 | Simple algebraic equation with one unknown |
| 41 | 69 | 20 | Square root |
| 42.5 | 67.7 | 21 | Improper fractions, mixed numbers |
| 42.5 | 67.7 | 21 | Reducing mixed numbers to simplest form |
| 44 | 57.6 | 16 | Ratio and proportion |
| 46 | 41.9 | 13 | Area of rectangle |
| 46 | 41.9 | 13 | Area of square |
| 46 | 41.9 | 13 | Using pi $\pi$ |
| 48 | 41.4 | 12 | Reading a rule |
| 50 | 38.7 | 12 | Area of circle |
| 50 | 38.7 | 12 | Circumference using $C = \pi d = 2\pi r$ |
| 50 | 38.7 | 12 | Area of circle using $A = \pi r^2$ |
| 52 | 35.5 | 11 | Area of triangle |
| 53 | 33.3 | 10 | Measuring angles |
| 56 | 29 | 9 | Area of parallelogram |
| 56 | 29 | 9 | Volume of rectangular solid |
| 56 | 29 | 9 | Volume of cube |
| 56 | 29 | 9 | Finding length of unknown side of right triangle |
| 56 | 29 | 9 | Area of trapezoid |
| 59 | 25.8 | 8 | Volume of cylinder |
| 61 | 22.6 | 7 | Liquid measure |
| 61 | 22.6 | 7 | Volume of sphere |
| 61 | 22.6 | 7 | Acute of obtuse angles |
| 63.5 | 19.4 | 6 | Volume of cone |
| 63.5 | 19.4 | 6 | Volume of pyramid |
| 65 | 12.9 | 4 | Temperature conversion |
| 66 | 3.4 | 1 | Micrometer reading |

TABLE 112

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING DATA PROCESSING STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1.5 | 7.1 | 2 | Multiplying whole numbers and decimals by 10, 100, etc. |
| 1.5 | 7.1 | 2 | Dividing whole numbers and decimals by 10,100,etc. |
| 3 | 61.9 | 13 | Micrometer reading |
| 4 | 56.7 | 17 | Ratio and proportion |
| 5.5 | 55.6 | 15 | Volume of cylinder |
| 5.5 | 55.6 | 15 | Volume of sphere |
| 7 | 55.2 | 16 | Simple algebraic equation with one unknown |
| 9 | 53.8 | 14 | Area of trapezoid |
| 9 | 53.8 | 14 | Volume of cone |
| 9 | 53.8 | 14 | Volume of pyramid |
| 11 | 53.6 | 15 | Changing decimals to per cents |
| 12 | 51.9 | 14 | Finding a number when a fractions part of it is known |
| 13.5 | 50 | 14 | Finding what per cent one number is of another |
| 13.5 | 50 | 13 | Area of parallelogram |
| 15 | 48.4 | 15 | Changing common fractions to decimals |
| 17 | 48.1 | 13 | Volume of cube |
| 17 | 48.1 | 13 | Square root |
| 17 | 48.1 | 13 | Finding a number when a per cent of it is known |
| 19 | 48 | 12 | Temperature conversion |
| 21 | 46.4 | 13 | Changing per cents to common fractions |
| 21 | 46.4 | 13 | Changing common fractions to per cents |
| 21 | 46.4 | 13 | Changing per cent to decimals |
| 25 | 44.4 | 12 | Finding length of unknown side of right triangle |
| 25 | 44.4 | 12 | Circumference using $C = \pi d = 2\pi r$ |
| 25 | 44.4 | 12 | Area of circle using $A = \pi r^2$ |
| 25 | 44.4 | 12 | Finding what part one number is of another |
| 25 | 44.4 | 12 | Area of triangle |
| 28 | 42.9 | 12 | Changing decimals to common fractions |
| 29.5 | 42.3 | 11 | Measuring angles |
| 29.5 | 42.3 | 11 | Volume of rectangular solid |
| 32 | 40.7 | 11 | Area of circle |
| 32 | 40.7 | 11 | Using pi $\pi$ |
| 32 | 40.7 | 11 | Acute and obtuse angles |
| 34 | 40 | 12 | Division, fractions |
| 35 | 39.3 | 11 | Division, mixed numbers |
| 36 | 37.9 | 11 | Comparing fractions |
| 37.5 | 37 | 10 | Multiplication, mixed numbers |
| 37.5 | 37 | 10 | Improper fractions, mixed numbers |
| 39 | 36.7 | 11 | Multiplication, fractions |
| 41.5 | 35.7 | 10 | Addition, mixed numbers |
| 41.5 | 35.7 | 10 | Subtraction, mixed numbers |
| 41.5 | 35.7 | 10 | Meaning of percentage |
| 41.5 | 35.7 | 10 | Division of decimals |
| 44 | 35.5 | 11 | Averages |
| 45 | 34.6 | 9 | Liquid measure |
| 47.5 | 33.3 | 9 | Decimal equivalents |
| 47.5 | 33.3 | 9 | Squaring a number |
| 47.5 | 33.3 | 10 | Reducing fractions to lowest terms |
| 47.5 | 33.3 | 10 | Subtraction, fractions |
| 50 | 32.3 | 10 | Addition, fractions |
| 51.5 | 32.1 | 9 | Finding per cent of a number |
| 51.5 | 32.1 | 9 | Multiplication of decimals |
| 53.5 | 29.6 | 8 | Area of square |
| 53.5 | 29.6 | 8 | Reducing mixed numbers to simplest form |
| 55 | 25.9 | 7 | Area of rectangle |
| 56.5 | 25.8 | 8 | Reading, writing decimals |
| 56.5 | 25.8 | 8 | Rounding off decimals |
| 58 | 23.1 | 6 | Reading a rule |
| 59.7 | 17.9 | 5 | Addition of decimals |
| 59.5 | 17.9 | 5 | Subtraction of decimals |
| 61 | 16.1 | 5 | Rounding numbers |
| 62.5 | 9.7 | 3 | Division, whole numbers |
| 62.5 | 9.7 | 3 | Reading large numbers |
| 65 | 6.5 | 2 | Addition, whole numbers |
| 65 | 6.5 | 2 | Subtraction, whole numbers |
| 65 | 6.5 | 2 | Multiplication, whole numbers |

TABLE 113

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF GENERAL CLERICAL TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 97.1 | 364 | Addition, whole numbers |
| 2 | 96.8 | 364 | Subtraction, whole numbers |
| 3 | 96 | 361 | Division, whole numbers |
| 4 | 94.7 | 356 | Multiplication, whole numbers |
| 5 | 88.7 | 331 | Reading, writing decimals |
| 6 | 87.9 | 326 | Reading large numbers |
| 7 | 87.2 | 328 | Rounding numbers |
| 8 | 85.8 | 321 | Rounding off decimals |
| 9 | 85.4 | 317 | Meaning of percentage |
| 10 | 85.2 | 317 | Addition of decimals |
| 11 | 84.7 | 316 | Changing per cent to decimals |
| 12.5 | 84.2 | 314 | Averages |
| 12.5 | 84.2 | 314 | Subtraction of decimals |
| 14 | 83.9 | 313 | Changing decimals to per cents |
| 15 | 83.6 | 311 | Multiplication of decimals |
| 16 | 82 | 305 | Division of decimals |
| 17 | 81.5 | 303 | Finding per cent of a number |
| 18 | 79.7 | 299 | Changing common fractions to decimals |
| 19 | 79.6 | 293 | Multiplying whole numbers and decimals by 10,100,etc. |
| 20 | 78 | 288 | Dividing whole numbers and decimals by 10, 100, etc. |
| 21 | 77.5 | 290 | Addition, fractions |
| 22 | 77 | 288 | Subtraction, fractions |
| 23.5 | 76.3 | 284 | Changing common fractions to per cents |
| 23.5 | 76.3 | 286 | Addition, mixed numbers |
| 28 | 75.8 | 282 | Finding what per cent one number is of another |
| 26 | 75.7 | 284 | Multiplication, fractions |
| 27 | 75.6 | 279 | Decimal equivalents |
| 28 | 75.4 | 282 | Subtraction, mixed numbers |
| 29 | 73.3 | 274 | Division, fractions |
| 30 | 73 | 273 | Multiplication, mixed numbers |
| 31 | 72.9 | 272 | Reducing fractions to lowest terms |
| 32 | 71 | 262 | Changing per cents to common fractions |
| 33.5 | 70.2 | 259 | Changing decimals to common fractions |
| 33.5 | 70.2 | 262 | Improper fractions, mixed numbers |
| 35 | 70.1 | 262 | Division, mixed numbers |
| 36.5 | 68.5 | 255 | Finding a number when a per cent of it is known |
| 36.5 | 68.5 | 254 | Reducing mixed numbers to simplest form |
| 38 | 66.2 | 245 | Finding what part one number is of another |
| 39 | 62.9 | 232 | Comparing fractions |
| 40 | 60.5 | 222 | Finding a number when a fractional part of it is known |
| 41 | 3.3 | 12 | Using pi $\pi$ |
| 42 | 30.6 | 111 | Reading a rule |
| 43 | 22.6 | 82 | Ratio and proportion |
| 44 | 13.6 | 49 | Simple algebraic equation with one unknown |
| 45 | 13.5 | 49 | Squaring a number |
| 46 | 12.7 | 46 | Liquid measure |
| 47 | 8.0 | 29 | Area of square |
| 48 | 7.1 | 26 | Area of rectangle |
| 49 | 6.4 | 23 | Square root |
| 50 | 5.0 | 18 | Area of circle |
| 51 | 4.1 | 15 | Area of triangle |
| 52.5 | 3.0 | 11 | Micrometer reading |
| 52.5 | 3.0 | 11 | Area of circle using $A = \pi r^2$ |
| 54.5 | 3 | 11 | Area of parallelogram |
| 54.5 | 3.0 | 11 | Volume of cube |
| 57 | 2.8 | 10 | Circumference using $C = \pi d = 2\pi r$ |
| 57 | 2.8 | 10 | Measuring angles |
| 57 | 2.8 | 10 | Volume of rectangular solid |
| 59 | 2.2 | 8 | Volume of cylinder |
| 61.5 | 1.7 | 6 | Temperature conversion |
| 61.5 | 1.7 | 6 | Volume of cone |
| 61.5 | 1.7 | 6 | Finding length of unknown side of right triangle |
| 61.5 | 1.7 | 6 | Area of trapezoid |
| 64.5 | 1.4 | 5 | Volume of sphere |
| 64.5 | 1.4 | 5 | Acute and obtuse angles |
| 66 | 1.1 | 4 | Volume of pyramid |

TABLE 114
RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING GENERAL CLERICAL STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 81.6 | 271 | Finding what part one number is of another |
| 2 | 81.4 | 272 | Finding a number when a per cent of it is known |
| 3 | 81 | 264 | Finding a number when a fractional part of it is known |
| 4 | 80.8 | 277 | Finding what per cent one number is of another |
| 5 | 77.9 | 220 | Ratio and proportion |
| 6 | 76.2 | 208 | Finding length of unknown side of right triangle |
| 7.5 | 76.1 | 207 | Volume of cone |
| 7.5 | 76.1 | 207 | Volume of pyramid |
| 9.5 | 76 | 206 | Volume of sphere |
| 9.5 | 76 | 209 | Micrometer reading |
| 11 | 75.9 | 205 | Temperature conversion |
| 12 | 75.4 | 205 | Volume of cylinder |
| 14 | 75.1 | 205 | Area of circle using $A = \pi r^2$ |
| 14 | 75.1 | 205 | Measuring angles |
| 14 | 75.1 | 205 | Acute and obtuse angles |
| 16 | 75 | 204 | Circumference using $C = \pi d = 2\pi r$ |
| 17 | 74.9 | 203 | Area of trapezoid |
| 18.5 | 74.4 | 203 | Volume of cube |
| 18.5 | 74.4 | 203 | Using pi $\pi$ |
| 20 | 74.3 | 202 | Volume of rectangular solid |
| 21 | 73.8 | 207 | Square root |
| 22 | 73.3 | 200 | Area of circle |
| 23 | 73 | 200 | Area of parallelogram |
| 24.5 | 72.9 | 250 | Changing common fractions to per cents |
| 24.5 | 72.9 | 204 | Simple algebraic equation with one unknown |
| 26 | 72.4 | 197 | Area of triangle |
| 27 | 72.1 | 245 | Changing per cents to common fractions |
| 28.5 | 72 | 247 | Decimal equivalents |
| 28.5 | 72 | 250 | Finding per cent of a number |
| 30 | 71 | 201 | Squaring a number |
| 31 | 70.1 | 237 | Changing decimals to common fractions |
| 32 | 70 | 247 | Changing common fractions to decimals |
| 33 | 69.8 | 192 | Area of rectangle |
| 34 | 69.7 | 244 | Changing decimals to per cents |
| 35 | 69.4 | 243 | Changing per cent to decimals |
| 36 | 69.1 | 190 | Area of square |
| 37 | 67.9 | 190 | Liquid measure |
| 38.5 | 67.3 | 233 | Division, fractions |
| 38.5 | 67.3 | 237 | Meaning of percentage |
| 40.5 | 64 | 224 | Division of decimals |
| 40.5 | 64 | 215 | Comparing fractions |
| 42 | 63.3 | 217 | Division, mixed numbers |
| 43 | 63.1 | 186 | Reading a rule |
| 44 | 62.1 | 218 | Multiplication, fractions |
| 45 | 60.7 | 210 | Multiplication, mixed numbers |
| 46 | 60.1 | 215 | Reading, writing decimals |
| 47 | 49 | 174 | Averages |
| 48 | 47.9 | 171 | Rounding numbers |
| 49.5 | 59.5 | 204 | Improper fractions, mixed numbers |
| 49.5 | 59.5 | 203 | Reducing mixed numbers to simplest form |
| 51.5 | 56.6 | 205 | Rounding off decimals |
| 51.5 | 56.6 | 198 | Subtraction, fractions |
| 53 | 56.4 | 195 | Subtraction, mixed numbers |
| 54 | 54.8 | 190 | Reducing fractions to lowest terms |
| 55 | 53.9 | 185 | Dividing whole numbers and decimals by 10,100,etc. |
| 56 | 52.7 | 185 | Multiplication of decimals |
| 57 | 51.9 | 181 | Addition, fractions |
| 58 | 50.9 | 177 | Addition, mixed numbers |
| 59 | 50.1 | 171 | Multiplying whole numbers and decimals by 10,100,etc. |
| 60 | 38.6 | 140 | Division, whole numbers |
| 61 | 38.1 | 134 | Subtraction of decimals |
| 62 | 37.2 | 131 | Addition of decimals |
| 63 | 35.8 | 127 | Reading large numbers |
| 64 | 25.2 | 91 | Multiplication, whole numbers |
| 65 | 19.2 | 70 | Addition, whole numbers |
| 66 | 18.6 | 68 | Subtraction, whole numbers |

TABLE 115

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF STENOGRAPHER/SECRETARY TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 87.5 | 241 | Reducing fractions to lowest terms |
| 2 | 87.1 | 366 | Addition, whole numbers |
| 3 | 86 | 361 | Subtraction, whole numbers |
| 4 | 83.6 | 351 | Division, whole numbers |
| 5 | 82.6 | 347 | Multiplication, whole numbers |
| 6 | 77.8 | 326 | Reading large numbers |
| 7 | 77.4 | 325 | Reading, writing decimals |
| 8 | 73.7 | 306 | Meaning of percentage |
| 9 | 73.1 | 305 | Averages |
| 10 | 72.8 | 305 | Rounding numbers |
| 11 | 70.7 | 297 | Rounding off decimals |
| 12 | 68.6 | 286 | Addition of decimals |
| 13 | 68.3 | 285 | Subtraction of decimals |
| 14 | 67.9 | 283 | Changing per cent to decimals |
| 15 | 66.7 | 276 | Changing decimals to per cents |
| 16 | 66.2 | 276 | Multiplication of decimals |
| 17 | 65.4 | 272 | Finding per cent of a number |
| 18 | 64.9 | 270 | Division of decimals |
| 19 | 64.7 | 269 | Multiplying whole numbers and decimals by 10,100,etc. |
| 20 | 64.6 | 270 | Changing common fractions to per cents |
| 21 | 64.3 | 267 | Dividing whole numbers and decimals by 10,100,etc. |
| 22 | 61 | 256 | Addition, fractions |
| 23 | 60.7 | 255 | Subtraction, fractions |
| 24 | 59.8 | 251 | Multiplication, fractions |
| 25 | 59.7 | 247 | Changing common fractions to per cents |
| 26 | 59.3 | 249 | Addition, mixed numbers |
| 27.5 | 58.8 | 244 | Decimal equivalents |
| 27.5 | 58.8 | 247 | Subtraction, mixed numbers |
| 29.5 | 58.6 | 243 | Finding what per cent one number is of another |
| 29.5 | 58.6 | 245 | Division, fractions |
| 31 | 58.1 | 241 | Changing per cents to common fractions |
| 32.5 | 57.1 | 240 | Improper fractions, mixed numbers |
| 32.5 | 57.1 | 240 | Multiplication, mixed numbers |
| 34 | 56.7 | 236 | Changing decimals to common fractions |
| 35 | 56.1 | 235 | Division, mixed numbers |
| 36 | 54 | 224 | Finding a number when a per cent of it is known |
| 37 | 53.7 | 225 | Reducing mixed numbers to simplest form |
| 38 | 53.5 | 224 | Comparing fractions |
| 39 | 52.5 | 218 | Finding what part one number is of another |
| 40 | 48.6 | 201 | Finding a number when a fractional part of it is known |
| 41 | 25.9 | 107 | Reading a rule |
| 42 | 17.5 | 73 | Ratio and proportion |
| 43 | 12.3 | 51 | Squaring a number |
| 44 | 10.6 | 44 | Simple algebraic equation with one unknown |
| 45 | 9.4 | 39 | Liquid measure |
| 46.5 | 6.7 | 28 | Area of rectangle |
| 46.5 | 6.7 | 28 | Area of square |
| 48 | 5.3 | 22 | Square root |
| 49 | 4.8 | 20 | Area of circle |
| 51 | 3.4 | 14 | Volume of rectangular solid |
| 51 | 3.4 | 14 | Volume of cube |
| 51 | 3.4 | 14 | Area of circle using $A = \pi r^2$ |
| 53 | 2.9 | 12 | Area of triangle |
| 54 | 2.6 | 11 | Volume of cylinder |
| 55 | 2.4 | 10 | Using pi $\pi$ |
| 56.5 | 2.2 | 9 | Volume of sphere |
| 56.5 | 2.2 | 9 | Area of parallelogram |
| 60.5 | 1.9 | 8 | Temperature conversion |
| 60.5 | 1.9 | 8 | Circumference using $C = \pi d = 2\pi r$ |
| 60.6 | 1.9 | 8 | Area of trapezoid |
| 60.5 | 1.9 | 8 | Volume of cone |
| 60.5 | 1.9 | 8 | Volume of pyramid |
| 60.5 | 1.9 | 8 | Micrometer reading |
| 64 | 1.4 | 6 | Measuring angles |
| 65.5 | .7 | 3 | Acute and obtuse angles |
| 65.5 | .7 | 3 | Finding length of unknown side of right triangle |

TABLE 116

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING STENOGRAPHER/SECRETARY STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 75.6 | 270 | Finding a number when a fractional part of it is known |
| 2 | 74.5 | 271 | Finding a number when a per cent of it is known |
| 3 | 74.4 | 250 | Ratio and proportion |
| 4 | 74.2 | 268 | Finding what part one number is of another |
| 5 | 74 | 236 | Finding length of unknown side of right triangle |
| 6 | 73.9 | 235 | Volume of cylinder |
| 8.5 | 73.7 | 235 | Circumference using $C = \pi d = 2 \pi r$ |
| 8.5 | 73.7 | 235 | Volume of sphere |
| 8.5 | 73.7 | 235 | Acute and obtuse angles |
| 8.5 | 73.7 | 235 | Volume of pyramid |
| 11 | 73.6 | 237 | Temperature conversion |
| 12 | 73.5 | 236 | Volume of cone |
| 13 | 73.4 | 235 | Measuring angles |
| 14 | 73.2 | 270 | Finding what per cent one number is of another |
| 15 | 73.1 | 234 | Area of trapezoid |
| 16 | 73 | 232 | Volume of cube |
| 17 | 72.7 | 232 | Using pi $\pi$ |
| 18 | 72.5 | 232 | Area of circle using $A = \pi r 2$ |
| 19 | 72.4 | 231 | Volume of rectangular solid |
| 20 | 72.3 | 232 | Micrometer reading |
| 21.5 | 72.2 | 231 | Area of parallelogram |
| 21.5 | 72.2 | 231 | Area of triangle |
| 23 | 71.7 | 231 | Area of circle |
| 24 | 70.7 | 229 | Simple algebraic equation with one unknown |
| 25 | 70.6 | 231 | Square root |
| 26 | 69 | 252 | Decimal equivalents |
| 27 | 67.1 | 216 | Area of rectangle |
| 28 | 66.3 | 242 | Changing common fractions to per cents |
| 29.5 | 65.8 | 240 | Changing per cents to common fractions |
| 29.5 | 65.8 | 212 | Area of square |
| 31 | 64.7 | 213 | Squaring a number |
| 32 | 63.5 | 238 | Changing common fractions to decimals |
| 33 | 63.3 | 229 | Changing decimals to common fractions |
| 34.5 | 61.6 | 202 | Liquid measure |
| 34.5 | 61.6 | 231 | Changing per cent to decimals |
| 36 | 61.4 | 227 | Changing decimals to per cents |
| 37 | 59.9 | 223 | Finding per cent of a number |
| 38 | 59 | 216 | Division, mixed numbers |
| 39 | 58.6 | 198 | Reading a rule |
| 40 | 58 | 211 | Comparing fractions |
| 41 | 57.1 | 209 | Division, fractions |
| 42.5 | 56.3 | 209 | Division of decimals |
| 42.5 | 56.3 | 207 | Improper fractions, mixed numbers |
| 44 | 56 | 214 | Meaning of percentage |
| 45.5 | 54.1 | 199 | Multiplication, mixed numbers |
| 45.5 | 54.1 | 198 | Reducing mixed numbers to simplest form |
| 47 | 52.2 | 192 | Multiplication, fractions |
| 48 | 52 | 197 | Reading, writing decimals |
| 49 | 50.5 | 186 | Subtraction, mixed numbers |
| 50 | 48.4 | 180 | Reducing fractions to lowest terms |
| 51 | 48 | 178 | Subtraction. fractions |
| 52 | 47.1 | 178 | Rounding off decimals |
| 53 | 46.7 | 172 | Addition, mixed numbers |
| 54 | 46.2 | 170 | Dividing whole numbers and decimals by 10.100.etc. |
| 55 | 44.9 | 166 | Addition, fractions |
| 56 | 41.8 | 161 | Averages |
| 57 | 40.5 | 149 | Multiplying whole numbers and decimals by 10.100,etc |
| 58 | 38.8 | 144 | Multiplication of decimals |
| 59 | 31.1 | 121 | Rounding numbers |
| 60 | 28.7 | 114 | Division, whole numbers |
| 61 | 28.2 | 106 | Subtraction of decimals |
| 62 | 27.2 | 108 | Reading large numbers |
| 63 | 27.1 | 102 | Addition of decimals |
| 64 | 17.7 | 70 | Multiplication, whole numbers |
| 65 | 12.4 | 50 | Subtraction, whole numbers |
| 66 | 10.9 | 44 | Addition. whole numbers |

TABLE 117

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS OF BUSINESS OCCUPATIONS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | SKILL |
|---|---|---|
| 1 | 95.3 | Addition, whole numbers |
| 2 | 94.9 | Subtraction, whole numbers |
| 3 | 92.1 | Multiplication, whole numbers |
| 4 | 91.7 | Division, whole numbers |
| 5 | 87.8 | Reading, writing decimals |
| 6 | 87 | Reading large numbers |
| 7 | 85.5 | Meaning of percentage |
| 8.5 | 84.3 | Rounding off decimals |
| 8.5 | 84.3 | Rounding numbers |
| 10 | 82.5 | Addition of decimals |
| 11 | 82.3 | Changing per cent to decimals |
| 12 | 81.5 | Subtraction of decimals |
| 13 | 81.1 | Multiplication of decimals |
| 14 | 81 | Changing decimals to per cents |
| 15.5 | 80 | Averages |
| 15.5 | 80 | Finding per cent of a number |
| 17 | 79.7 | Multiplying whole numbers and decimals by 10, 100, etc. |
| 18 | 78.2 | Dividing whole numbers and decimals by 10, 100, etc. |
| 19 | 78.1 | Division of decimals |
| 20 | 76.8 | Changing common fractions to decimals |
| 21 | 72.5 | Finding what per cent one number is of another |
| 22 | 72.1 | Decimal equivalents |
| 23 | 71.9 | Changing common fractions to per cents |
| 24 | 69.1 | Addition, fractions |
| 25 | 68.8 | Multiplication, fractions |
| 26 | 68.3 | Changing per cents to common fractions |
| 27 | 68.1 | Subtraction, fractions |
| 28 | 67.4 | Reducing fractions to lowest terms |
| 29 | 67.2 | Addition, mixed numbers |
| 30 | 67.1 | Changing decimals to common fractions |
| 31.5 | 66.3 | Finding a number when a per cent of it is known |
| 31.5 | 66.3 | Subtraction, mixed numbers |
| 33 | 66.2 | Finding what part one number is of another |
| 34 | 66.1 | Multiplication, mixed numbers |
| 35 | 65.7 | Division, fractions |
| 36 | 63.7 | Improper fractions, mixed numbers |
| 37 | 63.2 | Division, mixed numbers |
| 38 | 62.1 | Reducing mixed numbers to simplest form |
| 39 | 60.2 | Finding a number when a fractional part of it is known |
| 40 | 59.8 | Comparing fractions |
| 41 | 30.2 | Ratio and proportion |
| 42 | 26.6 | Reading a rule |
| 43 | 17.6 | Simple algebraic equation with one unknown |
| 44 | 13.9 | Squaring a number |
| 45 | 10.9 | Liquid measure |
| 46 | 7.5 | Area of square |
| 47 | 7.3 | Area of rectangle |
| 48 | 6.9 | Square root |
| 49 | 4.6 | Area of circle |
| 50 | 3.4 | Area of triangle |
| 51.5 | 3.3 | Area of circle using $A = \pi r^2$ |
| 51.5 | 3.3 | Volume of rectangular solid |
| 53.5 | 3.1 | Volume of cube |
| 53.5 | 3.1 | Using pi $\pi$ |
| 55 | 2.8 | Circumference using $C = \pi d = 2\pi r$ |
| 56 | 2.6 | Measuring angles |
| 58 | 2.4 | Volume of cylinder |
| 58 | 2.4 | Temperature conversion |
| 58 | 2.4 | Area of parallelogram |
| 60.5 | 1.9 | Micrometer reading |
| 60.5 | 1.9 | Area of trapezoid |
| 62.5 | 1.6 | Volume of sphere |
| 62.5 | 1.6 | Finding length of unknown side of right triangle |
| 64 | 1.5 | Volume of cone |
| 65 | 1.4 | Volume of pyramid |
| 66 | 1.3 | Acute and obtuse angles |

TABLE 118

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS OF BUSINESS OCCUPATIONS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING STUDENT

| RANK | PERCENT | SKILL |
|---|---|---|
| 1 | 77.5 | Finding a number when a per cent of it is known |
| 2 | 77.3 | Finding what per cent one number is of another |
| 3 | 77.2 | Finding a number when a fractional part of it is known |
| 4 | 77 | Finding what part one number is of another |
| 5 | 75.5 | Ratio and proportion |
| 6 | 72.6 | Volume of sphere |
| 7 | 72.5 | Volume of pyramid |
| 8.5 | 72.4 | Volume of cone |
| 8.5 | 72.4 | Finding length of unknown side of right triangle |
| 10 | 72.3 | Volume of cylinder |
| 12 | 71.8 | Decimal equivalents |
| 12 | 71.8 | Area of trapezoid |
| 12 | 71.8 | Temperature conversion |
| 14 | 71.7 | Acute and obtuse angles |
| 15 | 71.5 | Micrometer reading |
| 16.5 | 71.2 | Volume of cube |
| 16.5 | 71.2 | Circumference using $C = \pi d = 2\pi r$ |
| 18.5 | 71 | Volume of rectangular solid |
| 18.5 | 71 | Measuring angles |
| 20 | 70.6 | Area of circle using $A = \pi r\ 2$ |
| 21 | 70.5 | Using pi $\pi$ |
| 23.5 | 70.3 | Area of parallelogram |
| 23.5 | 70.3 | Area of circle |
| 23.5 | 70.3 | Simple algebraic equation with one unknown |
| 23.5 | 70.3 | Changing common fractions to per cents |
| 26 | 70.1 | Square root |
| 27 | 69.6 | Changing per cents to common fractions |
| 28.5 | 69.5 | Changing common fractions to decimals |
| 28.5 | 69.5 | Area of triangle |
| 30 | 67.8 | Changing decimals to common fractions |
| 31 | 65.8 | Finding per cent of a number |
| 32 | 65.5 | Area of rectangle |
| 33 | 65 | Area of square |
| 34.5 | 64.6 | Changing decimals to per cents |
| 34.5 | 64.6 | Changing per cent to decimals |
| 36 | 63.4 | Squaring a number |
| 37 | 62.6 | Division, fractions |
| 38 | 62.5 | Division, mixed numbers |
| 39.5 | 61.8 | Liquid measure |
| 39.5 | 61.8 | Meaning of percentage |
| 41 | 61 | Comparing fractions |
| 42 | 60.7 | Division of decimals |
| 43 | 58.2 | Multiplication, mixed numbers |
| 44 | 58 | Reading a rule |
| 45 | 57.8 | Reading, writing decimals |
| 46 | 57.5 | Improper fractions, mixed numbers |
| 47 | 56.7 | Multiplication, fractions |
| 48 | 56.2 | Reducing mixed numbers to simplest form |
| 49 | 54 | Rounding off decimals |
| 50 | 52.8 | Subtraction, mixed numbers |
| 51 | 52.7 | Subtraction, fractions |
| 52 | 51.7 | Reducing fractions to lowest terms |
| 53 | 49.7 | Addition, fractions |
| 54.5 | 49.2 | Addition, mixed numbers |
| 54.5 | 49.2 | Dividing whole numbers and decimals by 10, 100, etc. |
| 56 | 47 | Multiplication of decimals |
| 57 | 46 | Averages |
| 58 | 44.4 | Multiplying whole numbers and decimals by 10, 100, etc. |
| 59 | 40.2 | Rounding numbers |
| 60 | 36 | Division, whole numbers |
| 61 | 34.4 | Reading large numbers |
| 62 | 33 | Subtraction of decimals |
| 63 | 32.2 | Addition of decimals |
| 64 | 24.2 | Multiplication, whole numbers |
| 65 | 19.3 | Addition, whole numbers |
| 66 | 17.9 | Subtraction, whole numbers |

TABLE 119

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF DISTRIBUTIVE EDUCATION TEACHERS WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1.5 | 100 | 109 | Meaning of percentage |
| 1.5 | 100 | 111 | Addition, whole numbers |
| 3.5 | 99.1 | 110 | Multiplication, whole numbers |
| 3.5 | 99.1 | 110 | Subtraction, whole numbers |
| 5.5 | 98.2 | 107 | Changing per cent to decimals |
| 5.5 | 98.2 | 109 | Division, whole numbers |
| 7.5 | 96.3 | 105 | Changing decimals to per cents |
| 7.5 | 96.3 | 105 | Finding per cent of a number |
| 9 | 94.6 | 105 | Addition, fractions |
| 11 | 93.7 | 104 | Subtraction, fractions |
| 11 | 93.7 | 104 | Reading, writing decimals |
| 11 | 93.7 | 104 | Averages |
| 13.5 | 92.8 | 103 | Rounding numbers |
| 13.5 | 92.8 | 103 | Rounding off decimals |
| 15 | 91.7 | 100 | Finding what per cent one number is of another |
| 16 | 91 | 101 | Reducing fractions to lowest terms |
| 18 | 90.8 | 99 | Subtraction of decimals |
| 18 | 90.8 | 99 | Multiplying whole numbers and decimals by 10, 100, etc. |
| 18 | 90.8 | 99 | Addition of decimals |
| 20 | 90.7 | 98 | Finding a number when a per cent of it is known |
| 21.5 | 89.9 | 98 | Changing common fractions to per cents |
| 21.5 | 89.9 | 98 | Multiplication of decimals |
| 23 | 89.2 | 99 | Multiplication, fractions |
| 24.5 | 89.1 | 98 | Reading large numbers |
| 24.5 | 89.1 | 90 | Changing common fractions to decimals |
| 26.5 | 89 | 97 | Dividing whole numbers and decimals by 10, 100, etc. |
| 26.5 | 89 | 97 | Changing per cents to common fractions |
| 28.5 | 88.3 | 98 | Addition, mixed numbers |
| 28.5 | 88.3 | 98 | Subtraction, mixed numbers |
| 30 | 87.4 | 97 | Division, fractions |
| 31 | 88.1 | 96 | Division of decimals |
| 32 | 87 | 94 | Finding what part one number is of another |
| 33 | 86.5 | 9[illegible] | Multiplication, mixed numbers |
| 34 | 86.4 | 95 | Reducing mixed numbers to simplest form |
| 35 | 85.6 | 95 | Improper fractions, mixed numbers |
| 36 | 85.5 | 94 | Division, mixed numbers |
| 37 | 85.3 | 93 | Decimal equivalents |
| 38 | 81.7 | 89 | Changing decimals to common fractions |
| 39 | 81.5 | 88 | Finding a number when a fractional part of it is known |
| 40 | 81.1 | 90 | Comparing fractions |
| 41 | 50.9 | 55 | Reading a rule |
| 42 | 46.8 | 51 | Ratio and proportion |
| 43 | 44 | 48 | Liquid measure |
| 44 | 29.4 | 32 | Simple algebraic equation with one unknown |
| 45 | 27.9 | 31 | Area of square |
| 46 | 27 | 30 | Area of rectangle |
| 47 | 14.7 | 16 | Squaring a number |
| 48 | 10.7 | 11 | Square root |
| 49 | 10.1 | 11 | Area of circle |
| 50 | 8.1 | 9 | Area of triangle |
| 51 | 6.4 | 7 | Area of parallelogram |
| 52.5 | 5.5 | 6 | Circumference using $C = \pi d = 2\pi r$ |
| 52.5 | 5.5 | 6 | Measuring angles |
| 56 | 4.6 | 5 | Using pi $\pi$ |
| 56 | 4.6 | 5 | Volume of cylinder |
| 56 | 4.6 | 5 | Volume of cube |
| 56 | 4.6 | 5 | Area of trapezoid |
| 56 | 4.6 | 5 | Area of circle using $A = \pi r^2$ |
| 59.5 | 3.7 | 4 | Volume of rectangular solid |
| 59.5 | 3.7 | 4 | Volume of sphere |
| 61.5 | 28 | 3 | Volume of pyramid |
| 61.5 | 28 | 3 | Volume of cone |
| 63 | 27 | 3 | Acute and obtuse angles |
| 64.5 | 1.9 | 2 | Micrometer reading |
| 64.5 | 1.9 | 2 | Temperature conversion |
| 66 | 1.8 | 2 | Finding length of unknown side of right triangle |

TABLE 120

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING DISTRIBUTIVE EDUCATION STUDENT

| RANK | PERCENT | NUMBER | SKILL |
|---|---|---|---|
| 1 | 91.6 | 98 | Finding what per cent one number is of another |
| 2 | 90.6 | 96 | Finding a number when a per cent of it is known |
| 3 | 87 | 94 | Finding a number when a fractional part of it is known |
| 4 | 86.9 | 93 | Finding what part one number is of another |
| 5 | 86 | 92 | Changing common fractions to per cents |
| 6 | 82.6 | 76 | Simple algebraic equation with one unknown |
| 7 | 82.3 | 79 | Ratio and proportion |
| 10.5 | 81.8 | 72 | Volume of rectangular solid |
| 10.5 | 81.8 | 72 | Volume of cube |
| 10.5 | 81.8 | 72 | Volume of cylinder |
| 10.5 | 81.8 | 72 | Volume of sphere |
| 10.5 | 81.8 | 72 | Volume of cone |
| 10.5 | 81.8 | 72 | Volume of pyramid |
| 14.5 | 81.5 | 75 | Finding length of unknown side of right triangle |
| 14.5 | 81.5 | 75 | Area of parallelogram |
| 16.5 | 81.3 | 74 | Area of circle |
| 16.5 | 81.3 | 87 | Changing decimals to common fractions |
| 18 | 81.1 | 73 | Area of trapezoid |
| 19.5 | 80.6 | 87 | Division, fractions |
| 19.5 | 80.6 | 87 | Finding per cent of a number |
| 21 | 80.2 | 85 | Changing per cents to common fractions |
| 23 | 79.3 | 73 | Area of triangle |
| 23 | 79.3 | 73 | Circumference using $C = \pi d = 2\pi r$ |
| 23 | 79.3 | 73 | Acute and obtuse angles |
| 25 | 79 | 83 | Division, mixed numbers |
| 27 | 78.9 | 86 | Decimal equivalents |
| 27 | 78.9 | 71 | Square root |
| 27 | 78.9 | 71 | Area of circle using $A = \pi r^2$ |
| 29 | 78.2 | 68 | Micrometer reading |
| 30 | 78 | 71 | Using pi $\pi$ |
| 31 | 77.5 | 86 | Changing common fractions to decimals |
| 32 | 77.1 | 84 | Improper fractions, mixed numbers |
| 33 | 76.9 | 83 | Multiplication, fractions |
| 34 | 76.6 | 82 | Division of decimals |
| 35 | 75.9 | 82 | Changing decimals to per cents |
| 36.5 | 75.8 | 69 | Measuring angles |
| 36.5 | 75.8 | 69 | Temperature conversion |
| 38 | 75.7 | 81 | Changing per cent to decimals |
| 39.5 | 75 | 81 | Reducing mixed numbers to simplest form |
| 39.5 | 75 | 81 | Comparing fractions |
| 41 | 74.5 | 82 | Reading, writing decimals |
| 42 | 74.1 | 80 | Multiplication, mixed numbers |
| 43 | 73.7 | 70 | Area of rectangle |
| 44 | 72.6 | 69 | Area of square |
| 45 | 71.9 | 64 | Squaring a number |
| 46 | 71.3 | 77 | Meaning of percentage |
| 47.5 | 70.4 | 69 | Liquid measure |
| 47.5 | 70.4 | 76 | Subtraction, fractions |
| 50 | 69.7 | 76 | Reducing fractions to lowest terms |
| 50 | 69.7 | 76 | Addition, fractions |
| 50 | 69.7 | 76 | Subtraction, mixed numbers |
| 52 | 68.8 | 75 | Rounding off decimals |
| 53 | 67.9 | 74 | Addition, mixed numbers |
| 54 | 64.6 | 62 | Reading a rule |
| 55 | 63.6 | 68 | Dividing whole numbers and decimals by 10,100,etc. |
| 56 | 60 | 66 | Averages |
| 57 | 58.9 | 63 | Multiplying whole numbers and decimals by 10,100,etc. |
| 58 | 56.9 | 62 | Multiplication of decimals |
| 59 | 44.4 | 48 | Subtraction of decimals |
| 60 | 43.5 | 47 | Addition of decimals |
| 61 | 41.3 | 45 | Division, whole numbers |
| 62 | 40 | 44 | Rounding numbers |
| 63 | 31.5 | 34 | Reading large numbers |
| 64 | 30.9 | 34 | Multiplication, whole numbers |
| 65 | 17.3 | 19 | Addition, whole numbers |
| 66 | 16.4 | 18 | Subtraction, whole numbers |

TABLE 121

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS OF DISTRIBUTIVE EDUCATION WHO FELT THAT THE SKILL WAS ESSENTIAL FOR SUCCESS IN THEIR VOCATIONAL SPECIALTY

| RANK | PERCENT | SKILL |
|---|---|---|
| 1.5 | 100 | Addition, whole numbers |
| 1.5 | 100 | Meaning of percentage |
| 3.5 | 99.1 | Subtraction, whole numbers |
| 3.5 | 99.1 | Multiplication, whole numbers |
| 5.5 | 98.2 | Changing per cent to decimals |
| 5.5 | 98.2 | Division, whole numbers |
| 7.5 | 96.3 | Changing decimals to per cents |
| 7.5 | 96.3 | Finding per cent of a number |
| 9 | 94.6 | Addition, fractions |
| 11 | 93.7 | Reading, writing decimals |
| 11 | 93.7 | Subtraction, fractions |
| 11 | 93.7 | Averages |
| 13.5 | 92.8 | Rounding numbers |
| 13.5 | 92.8 | Rounding off decimals |
| 15 | 91.7 | Finding what per cent one number is of another |
| 16 | 91 | Reducing fractions to lowest terms |
| 18 | 90.8 | Addition of decimals |
| 18 | 90.8 | Subtraction of decimals |
| 18 | 90.8 | Multiplying whole numbers and decimals by 10, 100, etc. |
| 20 | 90.7 | Finding a number when a per cent of it is known |
| 21.5 | 89.9 | Changing common fractions to per cents |
| 21.5 | 89.9 | Multiplication of decimals |
| 23 | 89.2 | Multiplication, fractions |
| 24.5 | 89.1 | Reading large numbers |
| 24.5 | 89.1 | Changing common fractions to decimals |
| 26.5 | 89 | Changing per cents to common fractions |
| 26.5 | 89 | Dividing whole numbers and decimals by 10, 100, etc. |
| 28.5 | 88.3 | Addition, mixed numbers |
| 28.5 | 88.3 | Subtraction, mixed numbers |
| 30 | 88.1 | Division of decimals |
| 31 | 87.4 | Division, fractions |
| 32 | 87 | Finding what part one number is of another |
| 33 | 86.5 | Multiplication, mixed numbers |
| 34 | 86.4 | Reducing mixed numbers to simplest form |
| 35 | 85.6 | Improper fractions, mixed numbers |
| 36 | 85.5 | Division, mixed numbers |
| 37 | 85.3 | Decimal equivalents |
| 38 | 81.7 | Changing decimals to common fractions |
| 39 | 81.5 | Finding a number when a fractional part of it is known |
| 40 | 81.1 | Comparing fractions |
| 41 | 50.9 | Reading a rule |
| 42 | 46.8 | Ratio and proportion |
| 43 | 44 | Liquid measure |
| 44 | 29.4 | Simple algebraic equation with one unknown |
| 45 | 27.9 | Area of square |
| 46 | 27 | Area of rectangle |
| 47 | 14.7 | Squaring a number |
| 48.5 | 10.1 | Area of circle |
| 48.5 | 10.1 | Square root |
| 50 | 8.1 | Area of triangle |
| 51 | 6.4 | Area of parallelogram |
| 52.5 | 5.5 | Circumference using $C = \pi d = 2\pi r$ |
| 52.5 | 5.5 | Measuring angles |
| 56 | 4.6 | Area of circle using $A = \pi r^2$ |
| 56 | 4.6 | Area of trapezoid |
| 56 | 4.6 | Using pi $\pi$ |
| 56 | 4.6 | Volume of cube |
| 56 | 4.6 | Volume of cylinder |
| 59.5 | 3.7 | Volume of rectangular solid |
| 59.5 | 3.7 | Volume of sphere |
| 61.5 | 2.8 | Volume of cone |
| 61.5 | 2.8 | Volume of pyramid |
| 63 | 2.7 | Acute and obtuse angles |
| 64.5 | 1.9 | Micrometer reading |
| 64.5 | 1.9 | Temperature conversion |
| 66 | 1.8 | Finding length of unknown side of right triangle |

TABLE 122

RANK ORDERING OF BASIC MATHEMATICS SKILLS BY THE PERCENTAGE OF THE TOTAL SAMPLE OF TEACHERS OF DISTRIBUTIVE EDUCATION WHO FELT THAT THE SKILL WAS LACKING IN THE TYPICAL ENTERING STUDENT

| RANK | PERCENT | SKILL |
|---|---|---|
| 1 | 91.6 | Finding what per cent one number is of another |
| 2 | 90.6 | Finding a number when a per cent of it is known |
| 3 | 87 | Finding a number when a fractional part of it is known |
| 4 | 86.9 | Finding what part one number is of another |
| 5 | 86 | Changing common fractions to per cents |
| 6 | 82.6 | Simple algebraic equation with one unknown |
| 7 | 82.3 | Ratio and proportion |
| 10.5 | 81.8 | Volume of rectangular solid |
| 10.5 | 81.8 | Volume of cube |
| 10.5 | 81.8 | Volume of cylinder |
| 10.5 | 81.8 | Volume of sphere |
| 10.5 | 81.8 | Volume of cone |
| 10.5 | 81.8 | Volume of pyramid |
| 14.5 | 81.5 | Finding length of unknown side of right triangle |
| 14.5 | 81.5 | Area of parallelogram |
| 16.5 | 81.3 | Changing decimals to common fractions |
| 16.5 | 81.3 | Area of circle |
| 18 | 81.1 | Area of trapezoid |
| 19.5 | 80.6 | Division, fractions |
| 19.5 | 80.6 | Finding per cent of a number |
| 21 | 80.2 | Changing per cents to common fractions |
| 23 | 79.3 | Acute and obtuse angles |
| 23 | 79.3 | Circumference using $C = \pi d = 2\pi r$ |
| 23 | 79.3 | Area of triangle |
| 25 | 79 | Division, mixed numbers |
| 27 | 78.9 | Decimal equivalents |
| 27 | 78.9 | Area of circle using $A = \pi r^2$ |
| 27 | 78.9 | Square root |
| 29 | 78.8 | Using pi $\pi$ |
| 30 | 78.2 | Micrometer reading |
| 31 | 77.5 | Changing common fractions to decimals |
| 32 | 77.1 | Improper fractions, mixed numbers |
| 33 | 76.9 | Multiplication, fractions |
| 34 | 76.6 | Division of decimals |
| 35 | 75.9 | Changing decimals to per cents |
| 36 | 75.7 | Changing per cent to decimals |
| 37.5 | 75.8 | Measuring angles |
| 37.5 | 75.8 | Temperature conversion |
| 39.5 | 75 | Reducing mixed numbers to simplest form |
| 39.5 | 75 | Comparing fractions |
| 41 | 74.5 | Reading, writing decimals |
| 42 | 74.1 | Multiplication, mixed numbers |
| 43 | 73.7 | Area of rectangle |
| 44 | 72.6 | Area of square |
| 45 | 71.9 | Squaring a number |
| 46 | 71.3 | Meaning of percentage |
| 47.5 | 70.4 | Subtraction, fractions |
| 47.5 | 70.4 | Liquid measure |
| 50 | 69.7 | Reducing fractions to lowest terms |
| 50 | 69.7 | Addition, fractions |
| 50 | 69.7 | Subtraction, mixed numbers |
| 52 | 68.8 | Rounding off decimals |
| 53 | 67.9 | Addition, mixed numbers |
| 54 | 64.6 | Reading a rule |
| 55 | 63.6 | Dividing whole numbers and decimals by 10, 100, etc. |
| 56 | 60 | Averages |
| 57 | 58.9 | Multiplying whole numbers and decimals by 10, 100, etc. |
| 58 | 56.9 | Multiplication of decimals |
| 59 | 44.4 | Subtraction of decimals |
| 60 | 43.5 | Addition of decimals |
| 61 | 41.3 | Division, whole numbers |
| 62 | 40 | Rounding numbers |
| 63 | 31.5 | Reading large numbers |
| 64 | 30.9 | Multiplication, whole numbers |
| 65 | 17.3 | Addition, whole numbers |
| 66 | 16.4 | Subtraction, whole numbers |

## IMPLICATIONS

This study provides educators with empirical information which can be used in many ways.

Each vocational teacher, for example, can compare his perception of mathematics skill needs with those of his peers. Teachers might also better assist students in understanding that skill in basic mathematics stands high in priority in context of trade related needs. Vocational teachers might also sense an urgency for and promote diagnostic mathematics testing for vocational students. Using such data curriculum builders and administrators, including department heads, might better be able to create more relevant course experiences and exercises. Such revisions might provide closer union between mathematics courses and vocational specialty training. Teachers might also organize remedial experiences for those students found deficient in basic skills on diagnostic testing. Some might become involved with or have responsibility for cooperative or coordinative efforts concerning many mathematics programs in schools sending students to Area Vocational Technical Schools.

Mathematics teachers will be better informed as to their vocational colleagues' views of basic mathematics skill needs in specific vocational training programs. This information in itself might foster in some a new determination to increase emphasis and expect greater student competence in basic math skills, and in correlating mathematics training and review work with the specialty trainings being offered.

Counselors might use such data to help prospective vocational students compare their personal mathematics competency level with that expected in the vocational specialties under consideration. When conformity does not exist between attained and expected patterns, counselors can help students find ways of

remediating the situation or, if that is not possible, to help the student consider alternative programs requiring a different mathematical competence.

In summary, these data can help all educators personalize the mathematics skill development of students enrolled in specialty training programs. Specialty mathematics skill needs are cited, an individual's mathematics competence can be determined, a remedial program can be effected when needed.

By choosing to work together educators might better serve each student in his mathematics and vocational skill development.

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# APPENDIX

# THE PENNSYLVANIA STATE UNIVERSITY – DEPARTMENT OF VOCATIONAL EDUCATION

## MATHEMATICS SKILL INVENTORY (MSI)

1. What is your Major Teaching Specialty? (Be specific, For example - Home Economics-Foods, Home Economics-Clothing, Machine Shop)

2. How many credits have you earned beyond High School? (CHECK ONE)

| | | |
|---|---|---|
| A. 0-30 Credits | D. BS Completed | G. MS Plus |
| B. 31-60 Credits | E. BS Plus | H. Doctorate |
| C. 61-90 Credits | F. MS Completed | |

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**DIRECTIONS:**

We are trying to learn what basic mathematics skills are absolutely necessary for success in each business, trade, and specialty area taught in public schools. With this information we hope to plan mathematics remedial programs for those students who need them.

For each of the mathematics skills listed below will you please indicate whether the skill is essential for success is your specialty and also whether the skill is missing in the typical student enrolling in your program. **Please mark each skill on both dimensions.**

**USE NO. 2 PENCIL ONLY**

**THANK YOU FOR YOUR TIME AND COOPERATION**

**PLEASE MARK EACH SKILL ON BOTH DIMENSIONS**

| SKILL IS ESSENTIAL IN SPECIALTY YES NO | | SKILL IS MISSING IN TYPICAL STUDENT YES NO | |
|---|---|---|---|
| | Reading large numbers | | |
| | Rounding numbers | | |
| | Addition, whole numbers | | |
| | Subtraction, whole numbers | | |
| | Multiplication, whole numbers | | |
| | Division, whole numbers | | |
| | Averages | | |
| | Reducing fractions to lowest terms | | |
| | Addition, fractions | | |
| | Subtraction, fractions | | |
| | Multiplication, fractions | | |
| | Division, fractions | | |
| | Comparing fractions | | |
| | Improper fractions, numbers | | |
| | Reducing mixed numbers to simplest form | | |
| | Addition, mixed numbers | | |
| | Subtraction, mixed numbers | | |
| | Multiplication, mixed numbers | | |
| | Division, mixed numbers | | |
| | Reading, writing decimals | | |
| | Rounding off decimals | | |
| | Changing common fractions to decimals | | |

| SKILL IS ESSENTIAL IN SPECIALTY YES NO | | SKILL IS MISSING IN TYPICAL STUDENT YES NO | |
|---|---|---|---|
| | Changing decimals to common fractions | | |
| | Decimal equivalents | | |
| | Addition of decimals | | |
| | Subtraction of decimals | | |
| | Multiplication of decimals | | |
| | Division of decimals | | |
| | Multiplying whole numbers and decimals by 10, 100, etc. | | |
| | Dividing whole numbers and decimals by 10, 100, etc. | | |
| | Meaning of percent | | |
| | Changing per cent to decimals | | |
| | Changing decimals to per cents | | |
| | Changing per cents to common fractions | | |
| | Changing common fractions to per cents | | |
| | Finding per cent of a number | | |
| | Finding what per cent one number is of another | | |
| | Finding a number when a per cent of it is known | | |
| | Finding what part one number is of another | | |
| | Finding a number when a fractional part of it is known | | |
| | Squaring a number | | |
| | Square root | | |
| | Reading a rule | | |
| | Micrometer reading | | |

| SKILL IS ESSENTIAL IN SPECIALTY YES NO | | SKILL IS MISSING IN TYPICAL STUDENT YES NO | |
|---|---|---|---|
| | Liquid measure | | |
| | Temperature conversion | | |
| | Ratio and proportion | | |
| | Measuring angles | | |
| | [illegible] and obtuse angles | | |
| | [illegible] length of unknown side of right triangle | | |
| | Using pi $\pi$ | | |
| | Circumference using $C = \pi d = 2\pi r$ | | |
| | Area of circle using $A = \pi r^2$ | | |
| | Area of rectangle | | |
| | Area of square | | |
| | Area of parallelogram | | |
| | Area of triangle | | |
| | Area of trapezoid | | |
| | Area of circle | | |
| | Volume of rectangular solid | | |
| | Volume of cube | | |
| | Volume of cylinder | | |
| | Volume of sphere | | |
| | Volume of cone | | |
| | Volume of pyramid | | |
| | Simple algebraic equation with one unknown | | |

SAMPLE

PS 7010 PS (4710)



1.18

LISTING OF VOCATIONAL SPECIALTIES
WITH TOTAL NUMBER (N) INCLUDED
IN EACH SPECIALTY

| | |
|---|---|
| **Trade and Industrial** | |
| Air Conditioning and Heating | 19 |
| Appliance Repair | 29 |
| Automotive Body | 66 |
| Automotive Mechanic | 78 |
| Building Construction Maintenance | 30 |
| Carpentry | 49 |
| Cosmetology | 50 |
| Drafting | 44 |
| Dressmaking Related | 20 |
| Electrical Maintenance Construction | 39 |
| Electronics | 49 |
| Industrial Electrical | 20 |
| Interior Decorating/Commercial Art | 26 |
| Machine Tool Die | 100 |
| Masonry | 26 |
| Metal Trade | 10 |
| Mill and Cabinet Making | 28 |
| Printing Graphic Arts | 47 |
| Plumbing | 16 |
| Sheet Metal | 16 |
| T & I Others | 34 |
| Welding | 39 |
| Woodworking | 18 |
| TOTAL Tables from Trade and Industrial Occupations | 853 |
| **Technical Occupations** | |
| Building Technology | 14 |
| Chemical Technology | 12 |
| Drafting Design | 34 |
| Electronics Technology | 32 |
| Technical Other | 59 |
| TOTAL Tables for Technical Occupations | 151 |
| **Health Occupations** | |
| Dental Occupations | 9 |
| Health Assistant | 20 |
| Health Other | 24 |
| TOTAL Tables for Health Occupations | 53 |
| **Agricultural Occupations** | |
| Agricultural Mechanics | 15 |
| Agriculture Other | 48 |
| Agricultural Production | 98 |
| Horticulture | 18 |
| TOTAL Tables for Agricultural Occupations | 179 |
| **Gainful Home Economics** | |
| Child Care Guidance | 12 |
| Gainful Home Economics | 21 |
| Food Production | 40 |
| TOTAL Tables for Gainful Home Economics | 73 |



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| | |
|---|---|
| **Useful Home Economics** | |
| Child Development | 12 |
| Clothing Textiles | 93 |
| Comprehensive Home Economics | 179 |
| Consumer Education | 17 |
| Family Relations | 20 |
| Food Nutrition | 146 |
| Housing Home Furnishings | 10 |
| Useful Home Economics Other | 33 |
| TOTAL Tables for Useful Home Economics | 510 |
| **Business Occupations** | |
| Bookkeeping-Accounting | 426 |
| Business Data Processing | 64 |
| Business Education Other | 157 |
| Data Processing | 31 |
| General Clerical | 376 |
| Stenographer/Secretary | 420 |
| TOTAL Tables for Business Occupations | 1474 |
| **Distributive Education** | |
| Distributive Education | 111 |
| TOTAL Tables for Distributive Education | 111 |
| Survey Total (N) | 3404 |